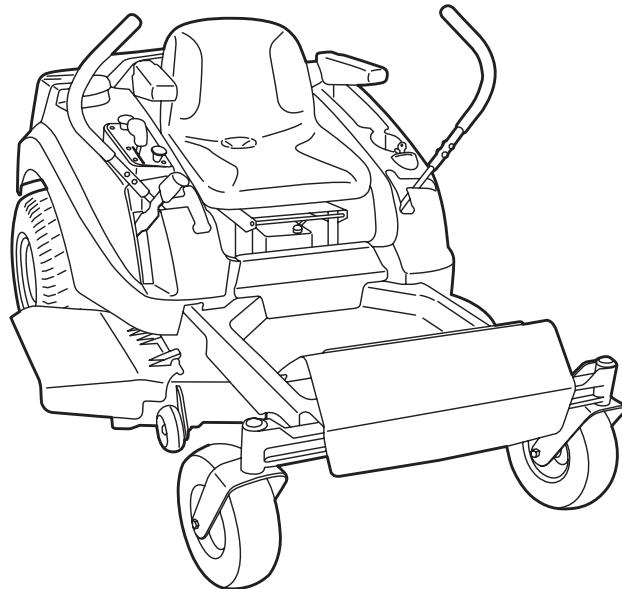




# OPERATOR'S MANUAL



## 250 Z Series (Snapper)

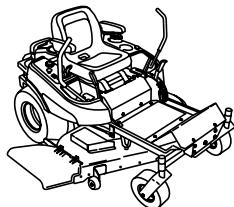
Mfg. No.	Description
----------	-------------

7800009	RZT185380BVE, 18.5HP Zero-Turn Rider with 38" Mower
7800010	RZT20420BVE2, 20HP Zero-Turn Rider with 42" Mower

## Javelin Series (Simplicity)

Mfg. No.	Description
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2690476	RZT20380KH, 20HP Zero-Turn Rider with 38" Mower
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*NOTE: In this manual, “left” and “right” are referred to as seen from the operating position.*

## ⚠ WARNING

You must read, understand and comply with all safety and operating instructions in this manual before attempting to set-up and operate your machine.

Failure to comply with all safety and operating instructions can result in loss of machine control, serious personal injury to you and / or bystanders, and risk of equipment and property damage. The triangle in the text signifies important cautions or warnings which must be followed.

This manual contains safety information to make you aware of the hazards and risks associated with the machine and how to avoid them. This machine is designed and intended to be used and maintained according to the manual for finish cutting of established lawns and is not intended for any other purpose. It is important that you read and understand these instructions thoroughly before attempting to start or operate this equipment.

## ⚠ WARNING

Engine exhaust from this product contains chemicals known, in certain quantities, to cause cancer, birth defects, or other reproductive harm.



## IMPORTANT SAFETY INSTRUCTIONS

**WARNING:** This powerful cutting machine is capable of amputating hands and feet and can throw objects that can cause injury and damage! Failure to comply with the following **SAFETY** instructions could result in serious injury or death to the operator or other persons. The owner of the machine must understand these instructions and must allow only persons who understand these instructions to operate machine. Each person operating the machine must be of sound mind and body and must not be under the influence of any substance, which might impair vision, dexterity or judgment. If you have any questions pertaining to your machine which your dealer cannot answer to your satisfaction, call or write the Customer Service Department at SNAPPER Products Inc., McDonough, Georgia 30253. Phone: (1-800-935-2967).

### PROTECTION FOR CHILDREN

Tragic accidents can occur if the operator is not alert to the presence of children. Children are often attracted to the machine and the mowing activity. Children who have been given rides in the past may suddenly appear in the mowing area for another ride and be run over or backed over by the machine. Never assume that children will remain where you last saw them.

1. **KEEP** children out of the mowing area and under the watchful care of a responsible adult other than the operator.
2. **DO NOT** allow children in yard when machine is operated (even with the blade OFF).
3. **DO NOT** allow children or others to ride on machine, attachments or towed equipment (even with the blades OFF). They may fall and be seriously injured.
4. **DO NOT** allow pre-teenage children to operate machine.
5. **ALLOW** only responsible adults & teenagers with mature judgment under close adult supervision to operate machine.
6. **DO NOT** operate blades in reverse. **STOP BLADES. LOOK** and **SEE** behind and down for children, pets and hazards before and while backing.
7. **USE EXTRA CARE** when approaching blind corners, shrubs, trees, or other objects that may obscure vision.

### PROTECTION AGAINST TIPOVERS

Slopes are a major factor related to loss-of-control and tip-over accidents, which can result in severe injury or death. All slopes require extra **CAUTION**. If you cannot back up the slope or if you feel uneasy on the slope, **DO NOT** mow it. Use extra care with grass catchers or other attachments; these affect the handling and the stability of the machine.

1. **DO NOT** operate machine on slopes exceeding 15 degrees (27% grade).
2. Exercise **EXTREME CAUTION** on slopes above 10 degrees (18% grade). Turn blades OFF when traveling uphill. Use a slow speed and avoid sudden or sharp turns.
3. **DO NOT** operate machine back and forth across face of slopes. Operate up and down. Practice on slopes with blades off.
4. **AVOID** starting, stopping or turning on slopes. If machine stops going uphill or tires lose traction, turn blades OFF and back slowly straight down the slope.

### PROTECTION AGAINST TIPOVERS

(Continued From Previous Column)

5. **STAY ALERT** for holes and other hidden hazards. Tall grass can hide obstacles. Keep away from ditches, washouts, culverts, fences and protruding objects.
6. **KEEP A SAFE DISTANCE** (at least 3 feet) away from edge of ditches and other drop offs. The machine could turn over if an edge caves in.
7. Always begin forward motion slowly and with caution.
8. Use weights or a weighted load carrier in accordance with instructions supplied with a grass catcher. **DO NOT** operate machine on slopes exceeding 10 degrees (18% grade) when equipped with grass catcher.
9. **DO NOT** put your foot on the ground to try to stabilize the machine.
10. **DO NOT** operate machine on wet grass. Reduced traction could cause sliding.
11. Choose a low enough speed setting so that you will not have to stop or shift on a slope. Tires may lose traction on slopes even though the brakes are functioning properly.
12. **DO NOT** operate machine under any condition where traction, steering or stability is doubtful.
13. Always keep the machine in gear when going down slopes. **DO NOT** shift to neutral (or actuate hydro roll release) and coast downhill.

### PREPARATION

1. Read, understand, and follow instructions and warnings in this manual and on the machine, engine and attachments. Know the controls and the proper use of the machine before starting.
2. Only mature, responsible persons shall operate the machine and only after proper instruction.
3. Data indicates that operators age 60 and above, are involved in a large percentage of mower-related injuries. These operators should evaluate their ability to operate the mower safely enough to protect themselves and others from serious injury.
4. Handle fuel with extra care. Fuels are flammable and vapors are explosive. Use only an approved fuel container. **DO NOT** remove fuel cap or add fuel with engine running. Add fuel outdoors only with engine stopped and cool. Clean spilled fuel from machine. **DO NOT** smoke.
5. Practice operation of machine with **BLADES OFF** to learn controls and develop skills.



## IMPORTANT SAFETY INSTRUCTIONS



### PREPARATION

(Continued From Previous Page)

6. Check the area to be mowed and remove all objects such as toys, wire, rocks, limbs and other objects that could cause injury if thrown by blade or interfere with mowing.
7. Keep people and pets out of mowing area. Immediately STOP blades, STOP engine, and STOP machine if anyone enters the area.
8. Check shields, deflectors, switches, blade controls and other safety devices frequently for proper operation and location.
9. Make sure all safety decals are clearly legible. Replace if damaged.
10. Protect yourself when mowing and wear safety glasses, long pants and substantial footwear.
11. Know how to STOP blades and engine quickly in preparation for emergencies.
12. Use extra care when loading or unloading the machine into a trailer or truck.
13. Check grass catcher components frequently for signs of wear or deterioration and replace as needed to prevent injury from thrown objects going through weak or worn spots.

### SAFE HANDLING OF GASOLINE

To avoid personal injury or property damage, use extreme care in handling gasoline. Gasoline is extremely flammable and the vapors are explosive

1. Extinguish all cigarettes, cigars, pipes and other sources of ignition.
2. Use only an approved fuel container.
3. DO NOT remove fuel cap or add fuel with the engine running. Allow the engine to cool before refueling.
4. DO NOT refuel the machine indoors.
5. DO NOT store the machine or fuel container inside where there is an open flame, spark or pilot light such as on a water heater or other appliances.
6. DO NOT fill fuel containers inside a vehicle or on a truck or trailer bed with a plastic liner. Always place the containers on the ground away from the vehicle before filling.
7. Remove gas-powered equipment from the vehicle or trailer and refuel it on the ground. If this is not possible, then refuel equipment using a portable container, rather than a gasoline dispenser nozzle.
8. DO NOT start gas powered equipment in enclosed vehicles or trailers.
9. Keep the nozzle in contact with the rim of the fuel tank or container opening at all times until fueling is complete. DO NOT use a nozzle lock-open device
10. If fuel is spilled on clothing, change clothing immediately.
11. Never overfill a fuel tank. Replace fuel cap and tighten securely.

### OPERATION

1. Mount and dismount machine from left side. Keep clear of discharge opening at all times.
2. Start engine from operator's seat, if possible. Make sure blades are OFF and parking brake is set.
3. DO NOT leave machine with engine running. STOP engine, STOP blades, SET brake, and Remove key before leaving operators position of any reason.
4. DO NOT operate machine unless properly seated with feet on feet rests or pedal(s).
5. STOP BLADES and ENGINE and make sure blades have stopped before removing grass catcher or unclogging mower to prevent loss of fingers or hand.
6. Blades must be OFF except when cutting grass. Set blades in highest position when mowing over rough ground.
7. Keep hands and feet away from rotating blades underneath deck. DO NOT place foot on ground while BLADES are ON or machine is in motion.
8. DO NOT operate machine without entire grass catcher or guards in place and working. DO NOT point discharge at people, passing cars, windows or doors.
9. Slow down before turning.
10. Watch out for traffic when near or crossing roadways.
11. STOP engine immediately after striking an obstruction. Inspect machine and repair damage before resuming operation.
12. Operate machine only in daylight or with good artificial light.
13. Move joystick (if equipped) SLOWLY to maintain control during speed and directional changes.
14. Exercise CAUTION when pulling loads. Limit loads to those you can safely control and attach loads to hitch plate as specified with attachment instructions.
15. On slopes, the weight of the towed equipment may cause loss of traction and loss of control. When towing, travel slowly and allow extra distance to stop.
16. DO NOT operate engine in enclosed areas. Engine exhaust gases contain carbon monoxide, a deadly poison.
17. DO NOT discharge material against a wall or obstruction. Material may ricochet back towards the operator.
18. Only use accessories approved by the manufacturer. See manufacturer's instructions for proper operation and installation of accessories.

### EMISSIONS

1. Engine exhaust from this product contains chemicals known, in certain quantities, to cause cancer, birth defects, or other reproductive harm.
2. Look for the relevant Emissions Durability Period and Air Index information on the engine emissions label.

### IGNITION SYSTEM

1. This spark ignition system complies with Canadian ICES-002.

# IMPORTANT SAFETY INSTRUCTIONS

### TOWING

1. Tow only with a machine that has a hitch designed for towing. DO NOT attach towed equipment except at the hitch point.
2. Follow the manufacturer's recommendation for weight limits for towed equipment and towing on slopes.
3. DO NOT allow children or others on towed equipment.
4. On slopes, the weight of the towed equipment may cause loss of traction and loss of control.
5. Travel slowly and allow extra distance to stop.

### MAINTENANCE

1. DO NOT store machine or fuel container inside where fumes may reach an open flame, spark or pilot light such as in a water heater, furnace, clothes dryer or other gas appliance. Allow engine to cool before storing machine in an enclosure. Store fuel container out of the reach of children in a well ventilated, unoccupied building.
2. Keep engine free of grass, leaves or excess grease to reduce fire hazard and engine overheating.
3. When draining fuel tank, drain fuel into an approved container outdoors and away from open flame.
4. Check brakes frequently; adjust, repair or replace as needed.
5. Keep all bolts, nuts and screws properly tight. Check that all cotter pins are in proper position.

### MAINTENANCE

(Continued From Previous Column)

6. Always provide adequate ventilation when running engine. Exhaust gases contain carbon monoxide, an odorless and deadly poison.
7. Disconnect negative (black) cable from battery before performing maintenance or service. Cranking engine could cause injury.
8. DO NOT work under machine without safety blocks.
9. Service engine and make adjustments only when engine is stopped. Remove spark plug wire(s) from spark plug(s) and secure wire(s) away from spark plug(s).
10. DO NOT change engine governor speed settings or overspeed engine.
11. Lubricate machine at intervals specified in manual to prevent controls from binding.
12. Mower blades are sharp and can cut. Wrap the blades or wear heavy leather gloves and use CAUTION when handling them.
13. DO NOT test for spark by grounding spark plug next to spark plug hole; spark plug could ignite gas exiting engine.
14. Have machine serviced by an authorized dealer at least once a year and have the dealer install any new safety devices.
15. Maintain or replace safety and instruction labels as necessary.
16. Use only genuine replacement parts to assure that original standards are maintained.

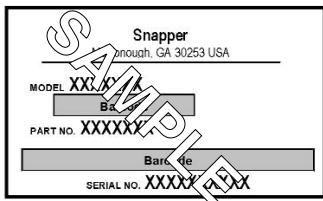


### WARNING

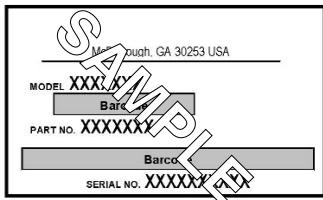


Grass Catcher bags used on this product are made of woven fabric, and are subject to deterioration and wear during normal usage. Check condition of bags before each use. Immediately replace worn or damaged catcher bags with only bags recommended by the manufacturer. The Grass Catcher is optional equipment on some models.

## Identification Numbers



### Snapper Models

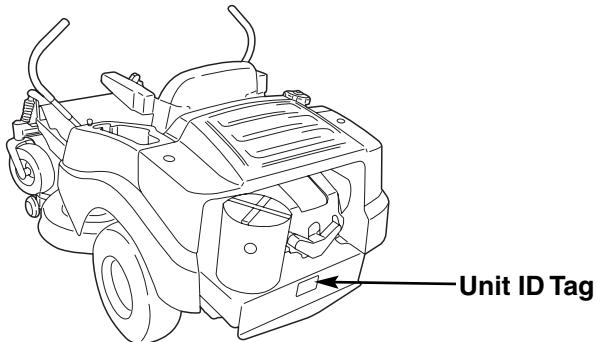


### Simplicity Models

**When contacting your authorized dealer for replacement parts, service, or information you MUST have these numbers.**

Record your model name/number, manufacturer's identification numbers, and engine serial numbers in the space provided for easy access. These numbers can be found in the locations shown.

*NOTE: For location of engine identification numbers, refer to the engine owner's manual.*



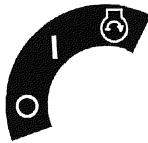
PRODUCT REFERENCE DATA	
Model Description Name/Number	
Unit MFG Number	Unit SERIAL Number
Mower Deck MFG Number	Mower Deck SERIAL Number
Dealer Name	Date Purchased
ENGINE REFERENCE DATA	
Engine Make	Engine Model
Engine Type/Spec	Engine Code/Serial Number

# Safety Decals

## SAFETY DECALS

This unit has been designed and manufactured to provide you with the safety and reliability you would expect from an industry leader in outdoor power equipment manufacturing.

Although reading this manual and the safety instructions it contains will provide you with the necessary basic knowledge to operate this equipment safely and effectively, we have placed several safety labels on the unit to remind you of this important information while you are operating your unit.



Decal - Ignition  
Switch  
Part No. 7100467



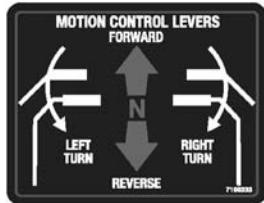
Decal - Throttle  
Control  
Part No. 7100413



Decal - Cutting  
Height Adjust  
Part No. 7100340



Decal - Park Brake Control  
Part No. 7100332



Decal - Motion  
Control Levers  
Part No. 7100333

All DANGER, WARNING, CAUTION and instructional messages on your rider and mower should be carefully read and obeyed. Personal bodily injury can result when these instructions are not followed. The information is for your safety and it is important! The safety decals below are on your rider and mower.

If any of these decals are lost or damaged, replace them at once. See your local dealer for replacements.

These labels are easily applied and will act as a constant visual reminder to you, and others who may use the equipment, to follow the safety instructions necessary for safe, effective operation.

### WARNING

#### AVOID SERIOUS INJURY OR DEATH

- Read operator's manual and other instructional material provided.
- Know location and function of all controls.
- Do not operate machine unless you are fully trained.
- Never start blades unless properly seated on machine.
- Keep safety devices, (guards, shield and switches), in place and working.
- Remove objects that can be thrown by the blades.
- Do not move motion controls rapidly. Avoid sudden turns.
- Do not operate blades in reverse.
- Look down and behind before and during reverse movement.
- Do not mow in any area where stability and traction is in doubt. Do not mow on slopes steeper than 15 degrees.
- Reduce speed on slopes. Go forward down slopes. Go reverse up slopes. Never travel across slopes.
- Avoid uphill starts. If machine stops going uphill, stop blades and back down slowly.
- Do not mow when children or others are around. Never carry children during operation even with blades off.
- Stop engine and be sure all moving parts are stationary before placing hands and feet near blades or servicing machine.

7100331

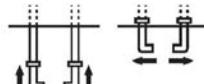
Decal - Warning  
Part No. 7100331

ROLL RELEASE RODS ARE LOCATED UNDER  
THE FRAME

MAKE SURE ENGINE IS OFF!

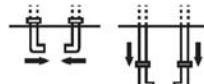
#### TO ROLL

Push rods in and  
move to side



#### TO DRIVE

Move rods inward and  
pull back



7100341

Decal - Roll Release Rods  
Part No. 7100341

## Safety Decals (Cont.) & Interlock System Checks



Decal - Danger - Cut Hands  
Part No. 7013010



Decal - Mower Guard  
Part No. 7046720



### SAFETY INTERLOCK SYSTEM

This unit is equipped with safety interlock switches. These safety systems are present for your safety, do not attempt to bypass safety switches, and never tamper with safety devices. Check their operation regularly.

#### Operational SAFETY Checks

##### TEST 1 — ENGINE SHOULD NOT CRANK IF:

- PTO switch is engaged, OR
- Motion control levers are not locked in their NEUTRAL LOCKED positions.

##### TEST 2 — ENGINE SHOULD CRANK IF:

- PTO switch is NOT engaged, AND
- Motion control levers are locked into their NEUTRAL LOCKED positions.

##### TEST 3 — ENGINE SHOULD SHUT OFF IF:

- Operator rises off seat with PTO engaged, OR
- Operator rises off seat with motion control levers not locked in their neutral locked positions, OR
- With operator seated, right motion control lever is moved out of its neutral locked position before left motion control lever.

##### TEST 4 — BLADE BRAKE CHECK

The mower blades and mower drive belt should come to a complete stop within five seconds after the electric PTO switch is turned off (or operator rises off seat). If mower drive belt does not stop within five seconds, see your dealer.

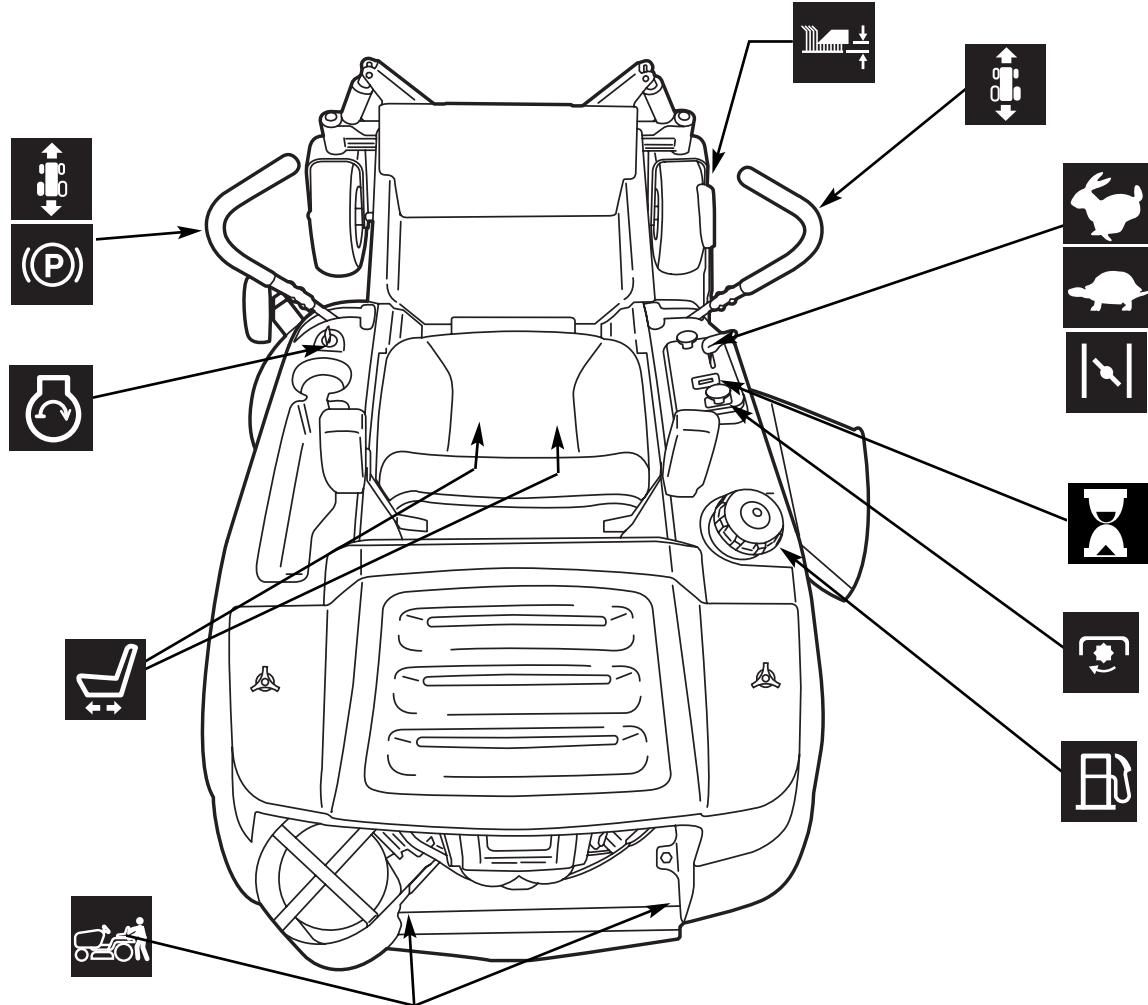
*NOTE: Once the engine has stopped, the PTO switch must be turned off, and the motion control levers must be locked in their NEUTRAL LOCKED positions in order to start the engine.*



### WARNING

If the unit does not pass a safety test, do not operate it. See your authorized dealer. Under no circumstance should you attempt to defeat the purpose of the safety interlock system.

# Features & Controls



## CONTROL FUNCTIONS

The information below briefly describes the function of individual controls. Starting, stopping, driving, and mowing require the combined use of several controls applied in specific sequences. To learn what combination and sequence of controls to use for various tasks see the *OPERATION* section.



### Motion Control Levers

These levers control the ground speed and direction of the rider. The left lever controls the left rear drive wheel and the right controls the right rear drive wheel.

Moving a lever forward increases the FORWARD speed of the associated wheel, and pulling back on a lever increases the REVERSE speed.

The further a lever is moved away from the neutral position the faster the drive wheel will turn.

See the *OPERATION* section for steering instructions.



### Engine Speed Control

The engine speed control controls engine speed. Move the engine speed control forward to increase engine speed and back to decrease engine speed. Always operate at FULL engine speed.



### Choke

Close the choke for cold starting. Open the choke once the engine starts. A warm engine may not require choking. Move the lever forward to close the choke. Move the lever back to open the choke.



## Ignition Switch

The ignition switch starts and stops the engine; it has three positions:

- OFF** Stops the engine and shuts off the electrical system.
- RUN** Allows the engine to run and powers the electrical system.
- START** Cranks the engine for starting.

*NOTE: Never leave the ignition switch in the RUN position with the engine stopped—this drains the battery.*



## Hour Meter

The hour meter measures the number of hours the key has been in the RUN position.

*Note: The hour meter will register the passage of time when the engine is running. The hour meter has a self contained power source so the total hours are always visible.*



## PTO Switch

The PTO (Power Take-Off) switch engages and disengages the mower blade clutch. To engage the PTO, pull UP on the switch. Push DOWN to disengage. Note that the operator must be seated firmly in the rider seat for the PTO to function.



## Transmission Release Valves

The transmission release valves deactivate the transmissions so that the unit can be pushed by hand. See PUSHING THE UNIT BY HAND for operational information.



## Seat Adjustment Knobs

The seat can be adjusted forward and backward. See SEAT ADJUSTMENTS for adjustment information.



## Fuel Tank Cap

To remove the cap, turn counterclockwise.



## Mower Cutting Height Adjustment Lever

The mower cutting height is adjustable from 1-1/2" to 4", in 1/2" increments. See CUTTING HEIGHT ADJUSTMENT for adjustment information.



## Parking Brake

The parking brake is incorporated into the left motion control lever. Locking the lever into the neutral locked position engages the parking brake; moving the lever out from the neutral locked position disengages the brake.

*Note: Both motion control levers must be locked into the neutral lock position together, or the unit will stall.*

### IMPORTANT

The figures and illustrations in this manual are provided for reference only and may differ from your specific model. Contact your dealer if you have questions.

# Operation



## GENERAL OPERATING SAFETY

Before first time operation:

- Be sure to read all information in the Safety and Operation sections before attempting to operate this rider and mower.
- Become familiar with all of the controls and how to stop the unit.
- Drive in an open area without mowing to become accustomed to driving the unit.

### ⚠ WARNING

Never operate on slopes greater than 27 percent (15°).

Select slow ground speed before driving onto a slope. Use extra caution when operating on slopes with a rear-mounted grass catcher.

Mow up and down slopes, not across the face, use caution when changing directions and DO NOT START OR STOP ON SLOPE.

### ⚠ WARNING

Never allow passengers to ride on the unit.

Before leaving the operator's position for any reason, lock the motion control levers in the neutral locked position, disengage the PTO, stop the engine and remove the key.

To reduce fire hazard, keep the engine, rider and mower free of grass, leaves and excess grease. Do not stop or park rider over dry leaves, grass or combustible materials.

Gasoline is highly flammable and must be handled with care. Never fill the tank when the engine is still hot from recent operation. Do not allow open flame, smoking or matches in the area. Avoid over-filling and wipe up any spills.

### ⚠ WARNING

If you do not understand how a specific control functions, or have not yet thoroughly read the FEATURES & CONTROLS section, do so now. Do NOT attempt to operate the rider without first becoming familiar with the location and function of ALL controls.

## CHECKS BEFORE STARTING

- Check that the crankcase is filled to full mark on dipstick. See the engine owner's manual for instructions and oil recommendations.
- Make sure all nuts, bolts, screws and pins are in place and secure.
- Adjust the seat position, and make certain you can reach all controls from the operator's position.
- Fill the fuel tank with fresh fuel. Refer to the engine owner's manual for fuel recommendations.

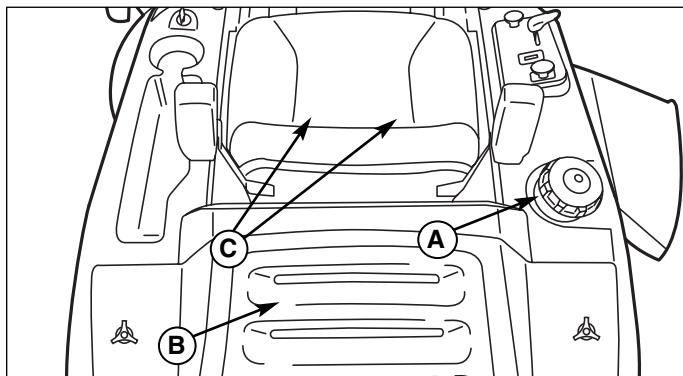


Figure 1. Pre-Start Checks

A. Fuel Tank Cap  
B. Crankcase Oil Fill (Under Engine Cover)  
C. Seat Adjustment Knobs

### ⚠ WARNING

Do not load this zero-turn rider on a trailer or truck using two separate ramps. Only use a single ramp that is at least one foot wider than the width of the rear wheels of this rider. This rider has a zero turning radius and the rear wheels could fall off the ramps, or the rider could tip over injuring the operator or bystanders.



## STARTING THE ENGINE

1. While sitting in the operator's seat, make sure the PTO switch is disengaged and the motion control levers are locked in the NEUTRAL LOCKED position.
2. Set the engine speed control to FAST position. Then fully close the choke. *NOTE: A warm engine may not require choking.*
3. Insert the key into the ignition switch and turn it to START.
4. After the engine starts, gradually open the choke. Warm up the engine by running it for at least a minute before engaging the PTO switch or driving the rider.
5. **After warming the engine, ALWAYS operate the rider at FULL ENGINE SPEED when mowing.**

*In the event of an emergency the engine can be stopped by simply turning the ignition switch to STOP. Use this method only in emergency situations. For normal engine shut down follow the procedure given in STOPPING THE RIDER.*

## STOPPING THE RIDER & ENGINE

1. Returning the motion control levers to the middle (or neutral drive) position will stop rider movement. Pivot the levers outward to lock them in the NEUTRAL LOCKED position.

*Note: Locking the motion control levers in their neutral locked positions engages the parking brake.*

2. Disengage the PTO by pushing down on the PTO switch.
3. Move the engine speed control to slow position and turn the ignition key to OFF. Remove the key.

## MOWING

1. Make sure the PTO switch is disengaged, the motion control levers are locked in their NEUTRAL LOCKED positions and the operator is in the seat.
2. Start the engine (see STARTING THE ENGINE).
3. Set the mower cutting height (see CUTTING HEIGHT ADJUSTMENT).
4. Set the engine speed control to FULL.
5. Engage the PTO by pulling up on the switch.
6. Move the motion control levers from neutral locked position to neutral drive position (in toward the operator).
7. Begin mowing. See Safety Rules & Information for tips on safe mowing practices.
8. When finished, shut off the PTO.

9. Stop the engine (see STOPPING THE RIDER AND ENGINE).

## PUSHING THE RIDER BY HAND

1. Disengage the PTO, lock the motion control levers into their neutral locked positions, turn the ignition OFF, remove the key, and wait for all moving parts to stop.
2. To disengage the transmissions (free-wheel position), push the roll release rods (A, Figure 2), located under the rear of the unit behind each transmission, in toward the transmission until the collar on the neck of each rod passes through the keyhole in the roll release plate, then lock the rod in the roll release position by sliding the rod sideways into the keyhole slot .
4. Move the motion control levers from their neutral locked positions.

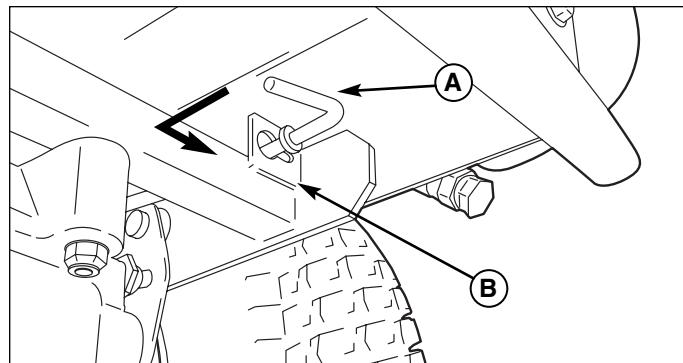
The rider can now be pushed by hand.

5. After moving the rider, re-engage the transmissions (drive position) by unlocking the roll release rods and pulling them out .



### DO NOT TOW RIDER

Towing the unit will cause transmission damage. Do not use another vehicle to push or pull this unit.



**Figure 2. Roll Release Components (On Each Side)**

A. Roll Release Rod  
B. Roll Release Plate



### WARNING

**DO NOT disengage the transmissions and coast down slopes. DO NOT use Roll Release to disengage the transmissions unless machine motion can be controlled and engine is off.**

# Operation

## ZERO TURN DRIVING PRACTICE

The motion control levers of the zero turn rider are responsive, and learning to gain a smooth and efficient control of the rider's forward, reverse, and turning movements will take some practice.

Spending some time going through the maneuvers shown and becoming familiar with how the unit accelerates, travels, and steers — before you begin mowing — is absolutely essential to getting the most out of the zero turn rider.

**Locate a smooth, flat area of your lawn** — one with plenty of room to maneuver. (Clear the area of objects, people and animals before you begin.) Operate the unit at mid-engine speed during this practice session (ALWAYS operate at full engine speed when mowing), and turn slowly to prevent tire slippage and damage to your lawn.

We suggest you begin with the Smooth Travel procedure to the right, and then advance through the forward, reverse, and turning maneuvers.

### Smooth Travel

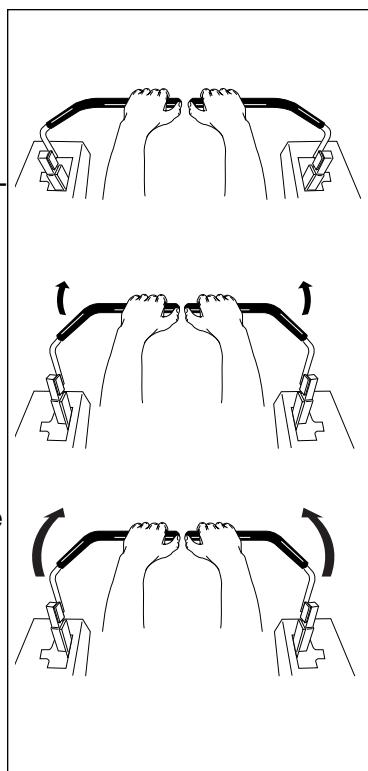
The motion control levers of the zero turn rider are responsive .

The BEST method of handling the ground speed levers is in three steps — as shown in Figure 3.

**FIRST** place your hands onto the levers as shown.

**SECOND**, to go forward gradually push the levers forward with your palms.

**THIRD**, to speed up move the levers farther forward. To slow down smoothly, slowly move the levers toward neutral.



**Figure 3. Move Control Levers Gradually**

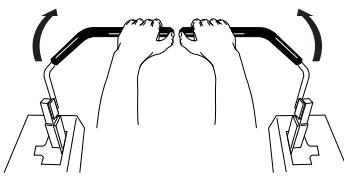
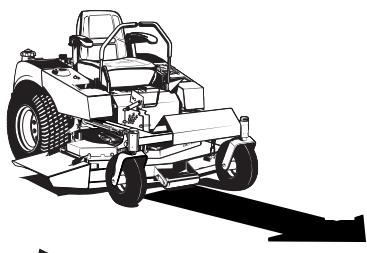
## BASIC DRIVING

### Forward Travel Practice

Gradually move both motion control levers — evenly FORWARD from neutral. Slow down and repeat.

*NOTE: Straight forward travel takes practice. If necessary, top speed can be balance-adjusted — see the Speed Balancing Adjustment in the Adjustments section near the back of this manual.*

#### Forward Travel



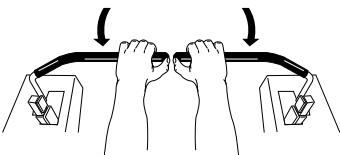
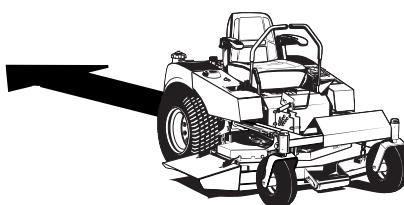
**Figure 4. Forward Travel**

### Reverse Travel Practice

LOOK DOWN & BEHIND, then gradually move both motion control levers evenly BACK from neutral. Slow down and repeat.

*NOTE: Practice backing up for several minutes before attempting to do so near objects. The rider turns as sharply in reverse as when going forward, and backing up straight takes practice.*

#### Reverse Travel



**Figure 5. Reverse Travel**

## Practice Turning Around a Corner

While traveling forward allow one lever to gradually return back toward neutral. Repeat several times.

*NOTE: To prevent pivoting directly on the tire tread, it is best to keep both wheels going at least slightly forward.*

### Executing Turns

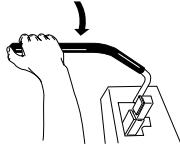
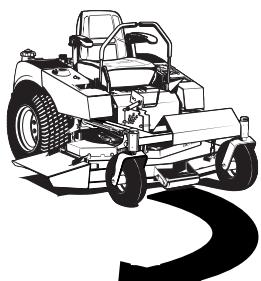


Figure 6. Turning Around a Corner

## Practice Turning In Place

To turn in place, “zero turn,” gradually move one motion control lever forward from neutral and one lever back from neutral simultaneously. Repeat several times.

*NOTE: Changing the amount each lever is pulled—forward or back, changes the “pivot point” you turn on.*

### Turning In-Place

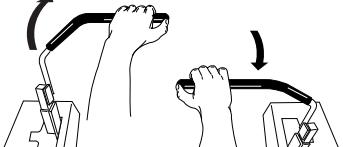
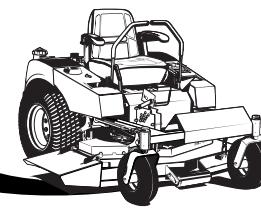


Figure 7. Turning in Place

## ADVANCED DRIVING

### Executing an End-Of-Row Zero Turn

Your zero turn rider's unique ability to turn in place allows you to turn around at the end of a cutting row rather than having to stop and Y-turn before starting a new row.

For example, to execute a right end-of-row zero turn:

1. Slow down at the end of the row.
2. Move the LEFT motion control lever forward slightly while moving the RIGHT motion control lever back to center and then slightly back from center.
3. Begin mowing forward again.

This technique turns the rider RIGHT and slightly overlaps the row just cut —eliminating the need to back up and re-cut missed grass.

*As you become more familiar and experienced with operating the zero turn rider, you will learn more maneuvers that will make your mowing time easier and more enjoyable.*

**Remember, the more you practice, the better your control of the rider will be!**

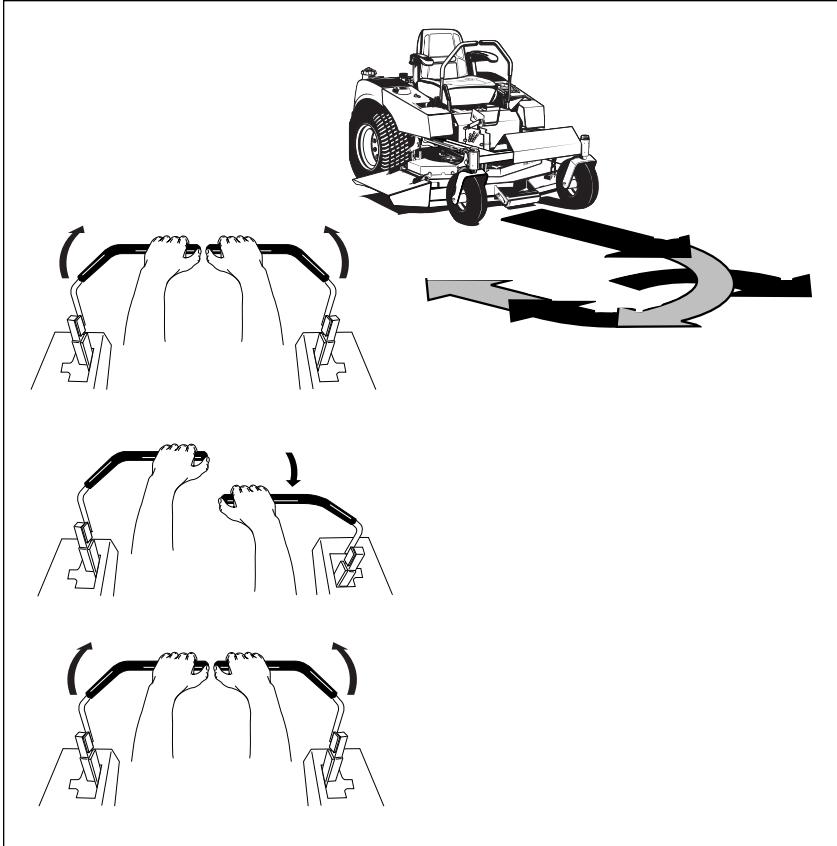
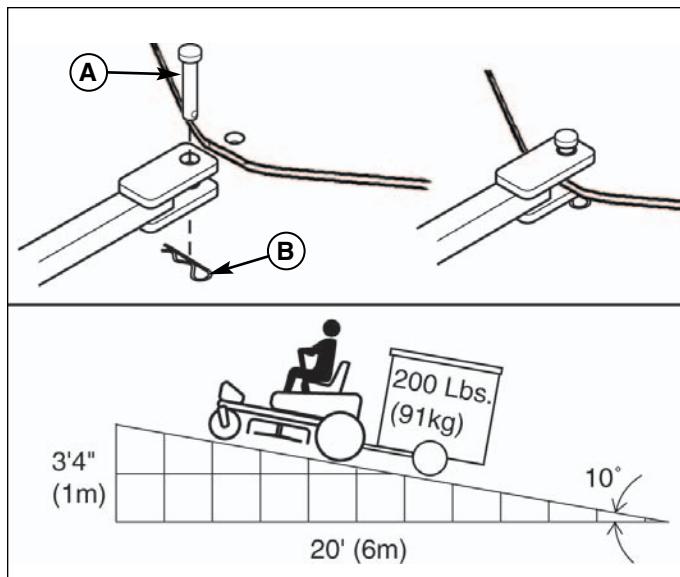


Figure 8. Executing an End-Of-Row Turn

## ATTACHING A TRAILER

The maximum weight of a towed trailer should be less than 200 lbs (91kg). Secure the trailer with an appropriately sized clevis pin (A, Figure 9) and clip (B).

Excessive towed loads can cause loss of traction and loss of control on slopes. Reduce towed weight when operating on slopes. The surface being driven on greatly impacts traction and stability. Wet or slippery surfaces can greatly reduce traction and the ability to stop or turn. Carefully evaluate the surface conditions before operating the unit and trailer, and never operate on slopes greater than 10°. See SLOPE OPERATION and TOWED EQUIPMENT in the safety section of this manual for additional safety information.



**Figure 9. Trailer Weight Recommendations**

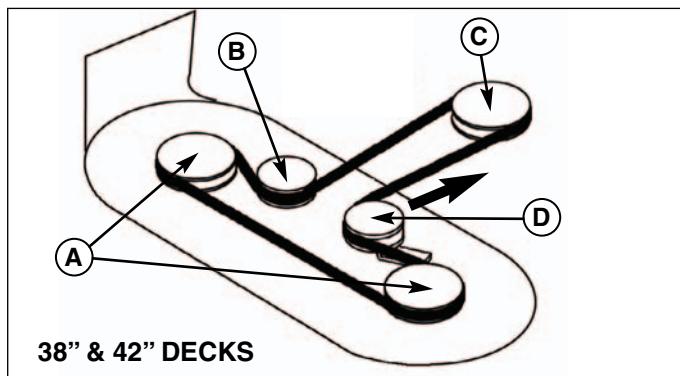
A. Clevis Pin  
B. Clip

## MOWER REMOVAL AND INSTALLATION

*NOTE: Perform mower installation and removal on a hard flat surface such as a concrete floor.*

### Removal

1. Disengage the PTO, lock the ground speed levers into their neutral lock positions, turn off the ignition, remove the key, and wait for all moving parts to stop.
2. Place a 2 x 4 or similar support under the mower deck, then lower the cutting height adjustment lever to its lowest position. See "CUTTING HEIGHT ADJUSTMENT".
3. Pull back on the tensioning idler (D, Figure 10) in the direction indicated by the arrow, and remove the mower belt from the PTO pulley (C).



**Figure 10. Mower Belt Routing**

A. Arbor (Blade Spindle) Pulley  
B. Stationary Idler  
C. PTO Pulley  
D. Tensioning Idler

(Continued Next Page)

4. Remove the hairpin clips (D, Figure 11) and clevis pins (C) securing the rear deck brackets (A) to the rear hanger arms (B).
5. Remove the hairpin clips (C, Figure 12) from the front hanger bar (A) and slide the washers (D) in away from the front deck bracket (B). Retain all removed hardware.
6. Slide the mower deck forward slightly and unhook the front hanger bar (A, Figure 12) from the slots in the front deck bracket.
7. Pivot the front wheels out of the way and slide the mower deck out from under the unit.

## Installation

1. Disengage the PTO, lock the motion control levers into their neutral lock positions, turn off the ignition, remove the key, and wait for all moving parts to stop.
2. Lower the height adjustment lever to its lowest position. See "CUTTING HEIGHT ADJUSTMENT".
3. Pivot the front wheels out of the way and slide the mower deck under the unit. Place a 2 x 4 or similar support under the mower deck.
4. Hook the front hanger bar (A, Figure 12) into the slots in the front deck bracket (B).

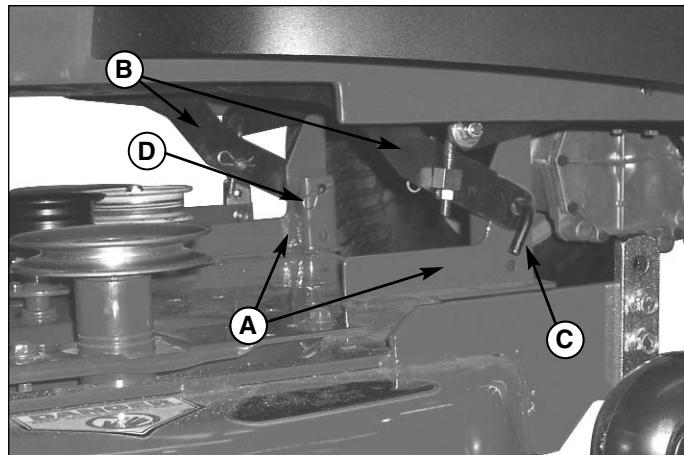
*Note: Make sure the two hanger bar washers (D) are located inside the front deck bracket.*

5. Slide one washer (D) against the inside of each side of the front deck bracket (B), and install the retained hairpin clips (C) into the holes in the front hanger bar (A).
6. Align the rear deck brackets (A, Figure 11) between the rear hanger arms (B), then install the clevis pins (C) and hairpin clips (D) retained from deck removal.

*Note: Install the clevis pins through the top set of holes in the rear deck brackets.*

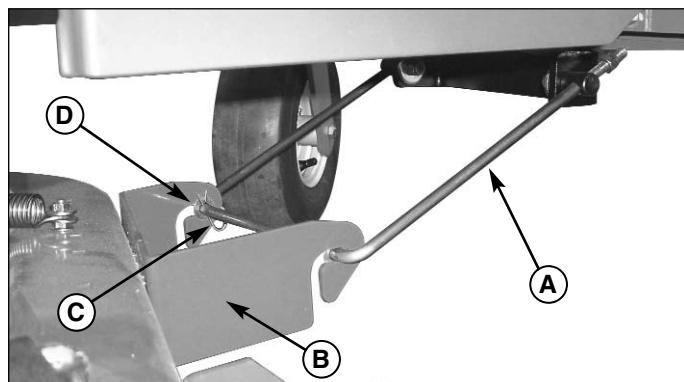
7. Pull back on the tensioning idler (D, Figure 10) in the direction indicated, and install the belt onto the PTO pulley as shown in Figure 10.

*Important: Be sure the belt is installed properly onto all pulleys.*



**Figure 11. Rear Deck Lift Components  
(Belt Removed For Clarity)**

A. Rear Deck Brackets  
B. Rear Hanger Arms  
C. Clevis Pin (2)  
D. Hairpin Clip (2)



**Figure 12. Front Deck Lift Components**

A. Front Hanger Bar  
B. Front Deck Bracket  
C. Hairpin Clip (2)  
D. Washer (2)

# Regular Maintenance



## MAINTENANCE SCHEDULE & PROCEDURES

The following schedule should be followed for normal care of your rider and mower. You will need to keep a record of your operating time. Determining operating time is easily accomplished by observing the elapsed time recorded by the hour meter.

SAFETY ITEMS	Before Each Use	Every 5 Hours	Every 25 Hours	Every 100 Hours	Every 250 Hours	Spring & Fall
Check Safety Interlock System	•					•
Check Rider Brakes	•					•
Check Mower Blade Stopping Time				•		•
RIDER MAINTENANCE ITEMS	Before Each Use	Every 5 Hours	Every 25 Hours	Every 100 Hours	Every 250 Hours	Spring & Fall
Check Rider / Mower for loose hardware		•				
Check / Clean Engine Cooling Fins			•			
Check / Adjust PTO Clutch			***		•	
Lubricate Rider & Mower **			•			
Clean Battery & Cables				•		
Check Tire Pressure			•			
Clean Deck & Check/Replace Mower Blades**			•			
ENGINE MAINTENANCE ITEMS	Before Each Use	Every 5 Hours	Every 25 Hours	Every 100 Hours	Every 250 Hours	Spring & Fall
Check Engine Oil Level	•					
Check / Change Engine Air Filter *						
Change Engine Oil & Filter *						
Inspect Spark Plug(s) *						
Check / Replace Fuel Filter *						

\* Refer to engine owner's manual. Change original engine oil after initial break-in period.

\*\* More often in hot (over 85° F: 30° C) weather or dusty operating conditions.

\*\*\* Service after the first 25 hours of operation, then every 250 hours of operation.

### LUBRICATION

Lubricate the unit at the points shown in Figure 13, as well as the others listed in this section.

#### Grease:



- front caster wheel axles
- front caster spindle bosses
- front axle center pivot
- mower deck arbors (blade spindles) \*
- mower deck idler arm

Use grease fittings when present. Disassemble parts to apply grease to moving parts when grease fittings are not installed.

Not all greases are compatible. Use automotive-type lithium grease.

\* Some deck arbors have grease fittings above the mower deck, while others have grease fittings below the deck.

#### Oil:



- motion control lever pivot points
- discharge chute hinge
- deck lift pivot points

Generally, all moving metal parts should be oiled where contact is made with other parts. Keep oil and grease off belts and pulleys. Remember to wipe fittings and surfaces clean both before and after lubrication.

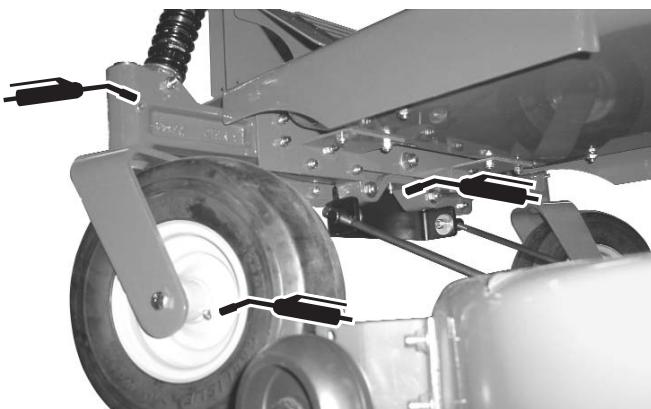


Figure 13. Lubrication Points (Grease)

## Regular Maintenance

### ⚠ WARNING

For your personal safety, do not handle the sharp mower blades with bare hands. Careless or improper handling of blades may result in serious injury.

### ⚠ WARNING

For your personal safety, blade mounting hardware must be installed with supplied blade washers, then securely tightened to noted torque.

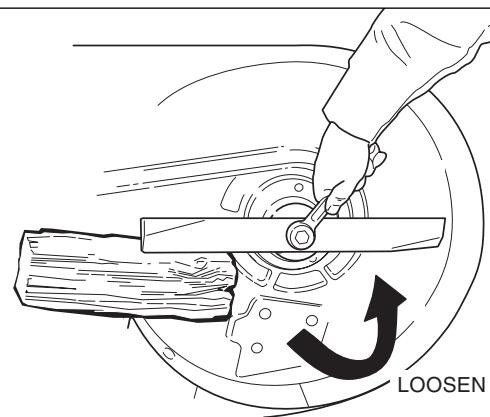


Figure 14. Blade Removal

## SERVICING THE MOWER BLADES

### Service Interval: Every 10 Hours or As Required

1. Remove mower deck (see "Mower Deck Removal").
2. See Figure 14. To remove blade for sharpening, use a block of wood to prevent blade rotation while loosening the hardware.
3. Remove the capscrew or nut (C, Figure 16), blade washers (B), and blade.
4. Use a file to sharpen blade to a fine edge. If blade is damaged, it must be replaced.
5. Balance the blade as shown in Figure 15. Center the blade's hole on a nail lubricated with a drop of oil. A balanced blade will remain level.
6. Reinstall the blade (Figure 16) with the tabs pointing up toward the mower deck as shown.
7. Reinstall the blade washers (B, Figure 16), concave side up, and capscrew or nut (C). Use a wooden block (A) to prevent blade rotation while tightening the hardware. Torque hardware to 80-90 ft-lbs (38" decks) or 30-40 ft-lbs (42" decks).

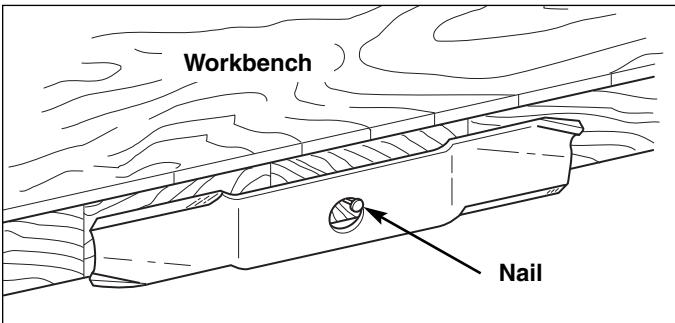


Figure 15. Balancing The Blade

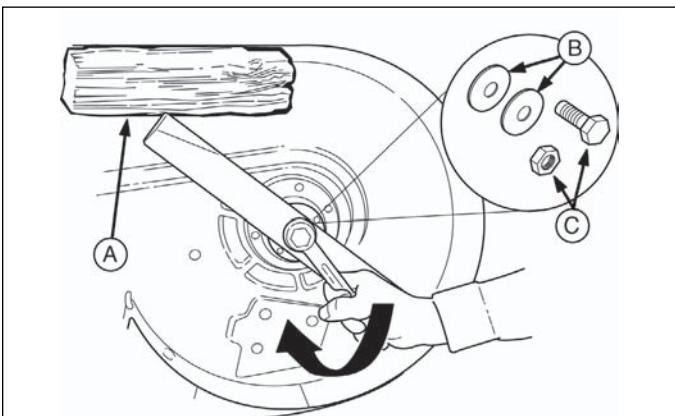


Figure 16. Blade Installation

- A. 4x4 Wood Block
- B. Blade Washer (2)
- C. Blade Capscrew / Nut

## CHECK TIRE PRESSURES

Tire pressure should be checked periodically, and maintained at the levels shown in the chart. Note that these pressures may differ slightly from the "Max Inflation" stamped on the side-wall of the tires. The pressures shown provide proper traction, improve cut quality, and extend tire life.

## CHECKING / ADDING FUEL

To add fuel:

1. Remove the fuel cap.
2. Fill the tank to the bottom of the filler neck. This will allow for fuel expansion.
3. Install and hand tighten the fuel cap.

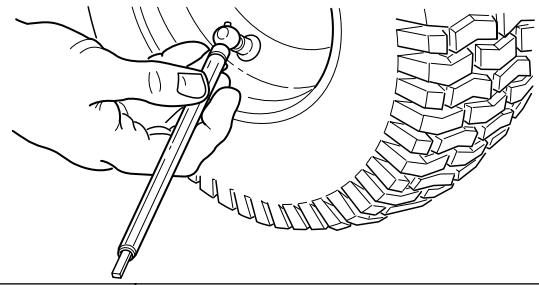
## FUEL FILTER

The fuel filter is located in the fuel line between fuel tank and fuel pump. If the filter is dirty or clogged, replace as follows:

1. Shut off the fuel valve (A, Figure 18).
2. Disconnect the negative battery cable.
3. Place a container below the filter to catch spilled fuel.
4. Using pliers, open and slide hose clamps from fuel filter (B, Figure 18).
5. Remove hoses from filter.
6. Install new filter in proper flow direction in fuel line.
7. Secure with hose clamps.
8. Reconnect the negative battery cable when finished.

## ENGINE MAINTENANCE

Refer to engine owners manual for all engine maintenance procedures and recommendations.



Tire	Pressure
Front	25 psi (1,72 bar)
Rear	15 psi (1,03 bar)

Figure 17. Checking Tire Pressure

## WARNING

Gasoline is highly flammable and must be handled with care. Never fill the tank when the engine is still hot from recent operation. Do not allow open flame, smoking or matches in the area. Avoid over-filling and wipe up any spills. Do not remove fuel filter when engine is hot, as spilled gasoline may ignite. DO NOT spread hose clamps further than necessary. Ensure clamps grip hoses firmly over filter after installation.



Do not use gasoline containing METHANOL, gasohol containing more than 10% ethanol, gasoline additives, premium gasoline, or white gas because engine/fuel system damage could result.

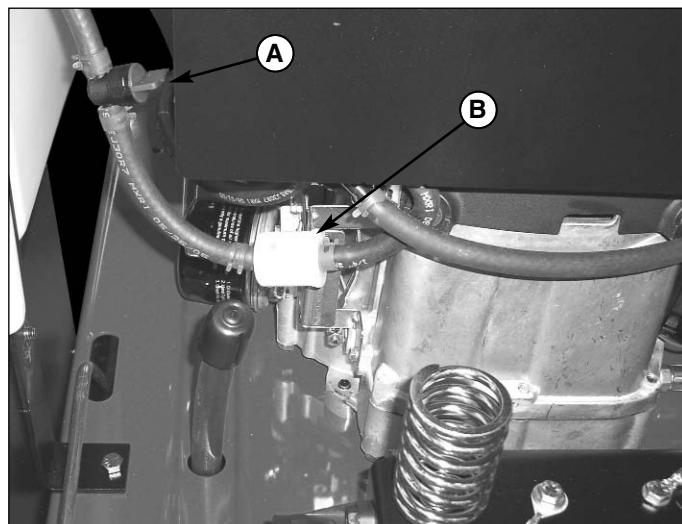


Figure 18. Fuel Valve Replacement  
(View looking back from battery compartment)

A. Fuel Valve  
B. Fuel Filter

## Regular Maintenance

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### BATTERY MAINTENANCE

#### Cleaning the Battery and Cables

1. Disconnect the cables from the battery, negative cable first (C, Figure 19).
2. Clean the battery terminals and cable ends with a wire brush until shiny.
3. Reinstall the battery and reattach the battery cables, positive cable first (A).
4. Coat the cable ends and battery terminals with petroleum jelly or non-conducting grease.
5. Be sure to replace the terminal cover (B) over the positive battery terminal.

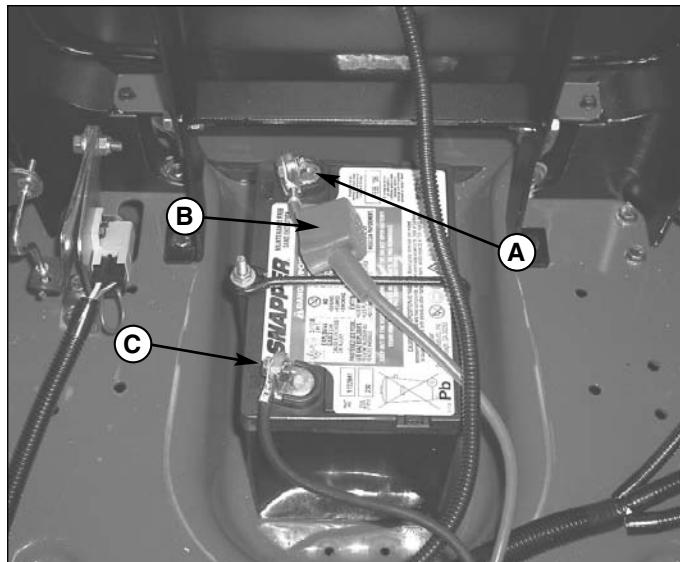
### STORAGE

Before you store your unit for the off-season, read the Maintenance and Storage instructions in the Safety Rules section, then perform the following steps:

- Disengage the PTO, set the parking brake, & remove the key.
- Perform engine maintenance and storage measures listed in the engine owner's manual. This includes draining the fuel system, or adding stabilizer to the fuel (do not store a fueled unit in an enclosed structure - see warning).
- Battery life will be increased if it is removed, put in a cool, dry place and fully charged about once a month. If the battery is left in the unit, disconnect the negative cable.

Before starting the unit after it has been stored:

- Check all fluid levels. Check all maintenance items.
- Perform all recommended checks and procedures found in the engine owner's manual.
- Allow the engine to warm up for several minutes before use.



**Figure 19. Battery Compartment**

A. Positive (+) Cable & Terminal  
B. Positive Terminal Cover  
C. Negative (-) Cable & Terminal

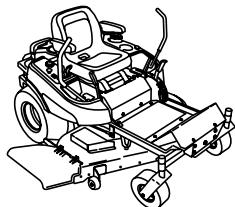
#### **WARNING**

Be careful when handling the battery. Keep flames and sparks away from the battery. When removing or installing battery cables, disconnect the negative cable FIRST and reconnect it LAST. If not done in this order, the positive terminal can be shorted to the frame by a tool.

#### **WARNING**

Never store the unit (with fuel) in an enclosed, poorly ventilated structure. Fuel vapors can travel to an ignition source (such as a furnace, water heater, etc.) and cause an explosion.

Fuel vapor is also toxic to humans and animals.



# Troubleshooting, Adjustments, & Service

## TROUBLESHOOTING

While normal care and regular maintenance will extend the life of your equipment, prolonged or constant use may eventually require that service be performed to allow it to continue operating properly.

The troubleshooting guide below lists the most common problems, their causes and remedies.

See the information on the following pages for instructions on how to perform most of these minor adjustments and service repairs yourself. If you prefer, all of these procedures can be performed for you by your local authorized dealer.

### WARNING

**To avoid serious injury, perform maintenance on the rider or mower only when the engine is stopped and the parking brake engaged. Always remove the ignition key, disconnect the spark plug wire and fasten it away from the plug before beginning the maintenance, to prevent accidental starting of the engine.**

## TROUBLESHOOTING THE RIDER

PROBLEM	CAUSE	REMEDY
<b>Engine will not turnover or start.</b>	<ol style="list-style-type: none"><li>1. Motion control levers not in neutral lock positions.</li><li>2. PTO (electric clutch) switch in ON position.</li><li>3. Out of fuel.</li><li>4. Fuel valve closed.</li><li>5. Engine flooded.</li><li>6. Gas is old or stale.</li><li>7. Battery terminals require cleaning.</li><li>8. Battery discharged or dead.</li><li>9. Wiring loose or broken.</li><li>10. Solenoid or starter motor faulty.</li><li>11. Safety interlock switch faulty.</li><li>12. Spark plug(s) faulty, fouled or incorrectly gapped.</li><li>13. Water in fuel.</li><li>14. Fuse(s) blown.</li></ol>	<ol style="list-style-type: none"><li>1. Lock motion control levers in neutral lock positions.</li><li>2. Place in OFF position.</li><li>3. If engine is hot, allow it to cool, then refill the fuel tank.</li><li>4. Open fuel valve.</li><li>5. Open the choke.</li><li>6. Drain fuel &amp; replace with fresh fuel.</li><li>7. Clean the battery terminals.</li><li>8. Recharge or replace.</li><li>9. Visually check wiring &amp; replace broken or frayed wires. Tighten loose connections.</li><li>10. Repair or replace. See authorized dealer</li><li>11. Replace as needed. See authorized service dealer.</li><li>12. Clean and gap or replace. See engine manual.</li><li>13. Drain fuel &amp; refill with fresh fuel.</li><li>14. Replace blown fuse(s).</li></ol>
<b>Engine starts hard or runs poorly.</b>	<ol style="list-style-type: none"><li>1. Fuel mixture too rich.</li><li>2. Spark plug faulty, fouled, or incorrectly gapped.</li><li>3. Fuel filter dirty.</li></ol>	<ol style="list-style-type: none"><li>1. Clean air filter. Check the choke.</li><li>2. Clean and gap or replace. (See engine manual.)</li><li>3. Replace fuel filter.</li></ol>
<b>Engine knocks.</b>	<ol style="list-style-type: none"><li>1. Low oil level.</li><li>2. Using wrong grade oil.</li></ol>	<ol style="list-style-type: none"><li>1. Check/add oil as required.</li><li>2. See engine manual.</li></ol>
<b>Excessive oil consumption.</b>	<ol style="list-style-type: none"><li>1. Engine running too hot.</li><li>2. Using wrong weight oil.</li><li>3. Too much oil in crankcase.</li></ol>	<ol style="list-style-type: none"><li>1. Clean engine fins, blower screen and air cleaner.</li><li>2. See engine manual.</li><li>3. Drain excess oil.</li></ol>
<b>Engine exhaust is black.</b>	<ol style="list-style-type: none"><li>1. Dirty air filter.</li><li>2. Engine choke control is in closed position.</li></ol>	<ol style="list-style-type: none"><li>1. Replace air filter. See engine manual.</li><li>2. Open choke control.</li></ol>

# Troubleshooting, Adjustments, & Service

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## Rider Troubleshooting Continued.

PROBLEM	CAUSE	REMEDY
<b>Engine runs, but rider will not drive.</b>	1. Transmission(s) disengaged. 2. Belt is broken. 3. Drive belt slips. 4. Brake is not fully released. 5. Internal transmission problem	1. Unlock roll release rod(s). 2. See Drive Belt Replacement. 3. See problem and cause below. 4. See Brake Adjustment. 5. See authorized service dealer
<b>Rider drive belt slips.</b>	1. Pulleys or belt greasy or oily. 2. Belt stretched or worn.	1. Clean as required. 2. Replace belt.
<b>Brake will not hold.</b>	1. Brake is incorrectly adjusted. 2. Internal transmission problem.	1. See Brake Adjustment. 2. See authorized service dealer.
<b>Rider steers or handles poorly.</b>	1. Steering linkage is loose. 2. Improper tire inflation.	1. Check and tighten any loose connections. 2. See Regular Maintenance Section.

## TROUBLESHOOTING THE MOWER

PROBLEM	CAUSE	REMEDY
<b>Mower will not raise.</b>	1. Mower deck not properly installed. 2. Deck lift component(s) damaged.	1. See Mower Removal and Installation. 2. See authorized service dealer for repair.
<b>Mower cut is uneven.</b>	1. Mower not leveled properly. 2. Rider tires not inflated equally or properly.	1. See Mower Adjustment. 2. See Regular Maintenance Section.
<b>Mower cut is rough looking.</b>	1. Engine speed too slow. 2. Ground speed too fast. 3. Blades are dull. 4. Mower drive belt slipping because it is oily or worn. 5. Blades not properly fastened to arbors.	1. Set engine speed control to full. 2. Decrease Ground Speed. 3. Sharpen or replace blades. See Mower Blade Service. 4. Clean or replace belt as necessary. 5. See Servicing the Mower Blades.
<b>Engine stalls easily with mower engaged.</b>	1. Engine speed too slow. 2. Ground speed too fast. 3. Cutting height set too low. 4. Discharge chute jamming with cut grass.	1. Set engine speed control to full. 2. Decrease Ground Speed. 3. Cut tall grass at maximum cutting height during first pass. 4. Cut grass with discharge pointing toward previously cut area.
<b>Excessive mower vibration.</b>	1. Blade mounting hardware is loose. 2. Mower blades, arbors, or pulleys are bent. 3. Mower blades are out of balance. 4. Belt installed incorrectly.	1. Tighten to specified torque. 2. Check and replace as necessary. 3. Remove, sharpen, and balance blades. See Maintenance Section. 4. Reinstall Correctly.
<b>Excessive belt wear or breakage.</b>	1. Bent or rough pulleys. 2. Using incorrect belt.	1. Repair or replace. 2. Replace with correct belt.
<b>Mower drive belt slips or fails to drive.</b>	1. Idler pulley spring broken or not properly attached. 2. Mower drive belt broken.	1. Repair or replace as needed. 2. Replace drive belt.

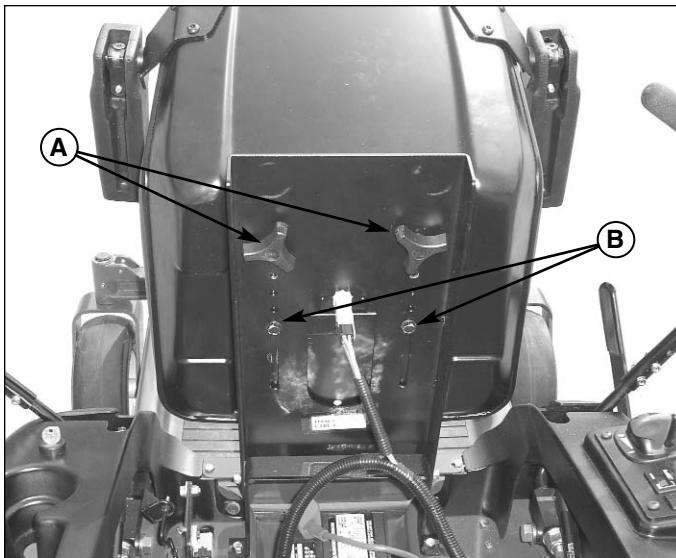


Figure 20. Seat Adjustment

- A. Adjustment Knobs
- B. Support bolts

## SEAT ADJUSTMENTS

The seat and motion control levers should be adjusted so that operator's elbows are supported by the arm rests when his/her hands are on the controls, and the motion control levers can be moved through their full range of motion without contacting the operator's legs.

### Seat Position Adjustment

See Figure 20. The seat can be adjusted forward and back. Remove the knobs (A), and loosen the support bolts (B). Slide the seat to the desired position, then reinstall the knobs and retighten the bolts.

## MOTION CONTROL LEVER ADJUSTMENT

The motion control levers can be adjusted in two ways. The placement of the levers (how close the ends are to one another) and the height of the levers can be adjusted.

**To Adjust the Lever Placement:** Loosen the two bolts (B, Figure 21) securing the control track, and adjust the control track in or out to properly adjust the lever end spacing.

*Note: The bottom bolt may be accessed from beneath the fender.*

**To Adjust the Handle Height:** Remove the motion control lever mounting hardware (A, Figure 21) and reposition the lever either up or down from its original position. You may need to readjust the handle placement as described above.

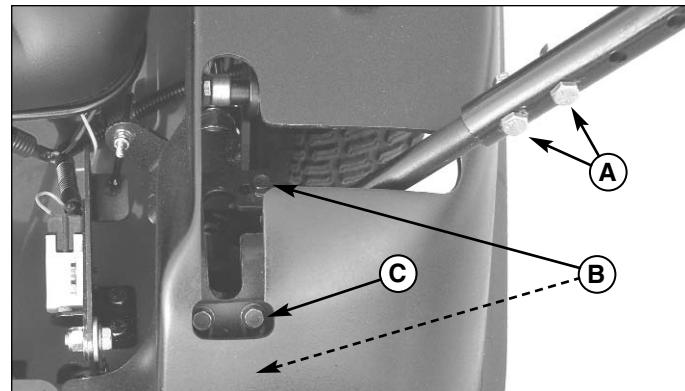


Figure 21. Motion Control Lever Adjustments

- A. Lever Height Adjustment Hardware
- B. Lever Placement Adjustment Hardware
- C. Forward Adjust Plate

## SPEED BALANCING ADJUSTMENT

If the rider veers to the right or left when the motion control levers are in the maximum forward position, the top speed of each of these levers can be balanced. Only adjust the speed of the wheel that is traveling faster.

### TO REDUCE THE SPEED OF THE FASTER WHEEL

1. Loosen the two bolts securing the forward adjust plate (C, Figure 21).
2. Slide the plate up approximately 1/8".
3. Retighten the bolts and recheck speed balance.
4. Repeat steps 1-3 until adjustment is complete.

### WARNING

**DO NOT adjust the rider for a faster overall speed forward or reverse than it was designed for.**

# Troubleshooting, Adjustments, & Service

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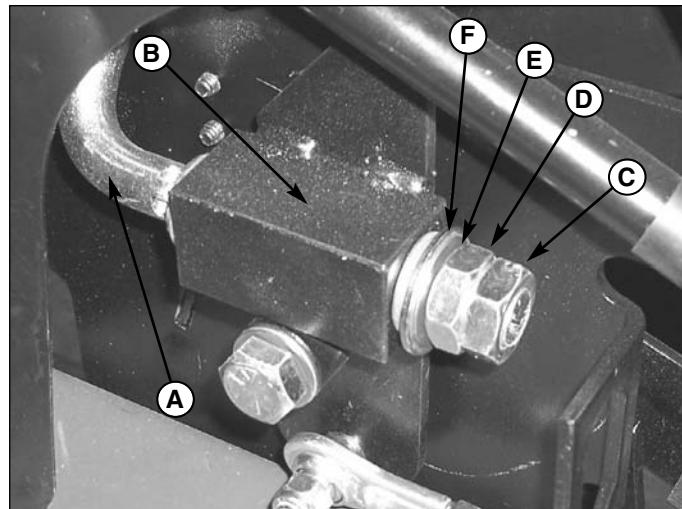
## MOTION CONTROL LEVER FRICTION ADJUSTMENT

The motion control levers should be tight when moving in and out of their neutral locked positions. If the levers are loose, the lever friction should be adjusted.

To adjust friction:

Loosen the outside nut (C, Figure 21a) securing the motion control lever (A) to the control bracket weldment (B). Tighten the inner nut (D) against the bellville washer (E) to 10 ft-lbs. Tighten the outside nut against the inside nut, without allowing the inside nut to turn.

*Note: The control bracket weldment is located beneath the fender next to the operator's seat.*



**Figure 21a. Motion Control Lever Friction Adjustment**

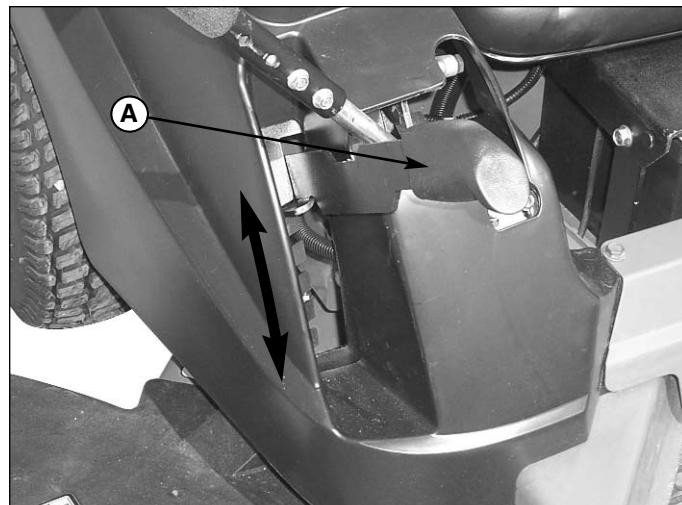
- A. Motion Control Lever
- B. Control Bracket Weldment
- C. Outside Nut
- D. Inside Nut
- E. Bellville Washer
- F. Flat Washer

## CUTTING HEIGHT ADJUSTMENT

The cutting height adjustment lever controls the mower cutting height. The cutting height is adjustable between 1-1/2" (3.8 cm) and 4" (10.1 cm).

To adjust cutting height:

Move the adjustment lever (A, Figure 22) slightly upwards and outwards, then raise or lower the lever to the desired height notch.



**Figure 22. Cutting Height Adjustment**

- A. Cutting Height Adjustment Lever

## ROLLER BAR ADJUSTMENT

The rollers on this Zero Turn unit are not intended to ride on the ground. DO NOT adjust rollers to ride on the ground. Rollers riding on the ground will damage turf and or unit.

## NEUTRAL ADJUSTMENTS

If the machine creeps while the motion control levers are locked into their neutral locked positions, then it may be necessary to adjust the link rods.

Perform this adjustment on a hard level surface such as a concrete floor.

**IMPORTANT NOTE:** *This adjustment should be performed with the engine OFF. Perform the adjustment, then start the engine to check the adjustment. If further adjustment is required, stop the engine before performing the adjustment.*

1. Determine which wheel is creeping. The left side transmission and link rod control the left wheel, the right link rod controls the right wheel.
2. Disengage the PTO, lock the motion control levers into their neutral locked positions, turn the engine off, remove the key, and wait for all moving parts to stop.
3. Remove the hardware (C, Figure 23) connecting the rod end (B) to the control bracket weldment (A).

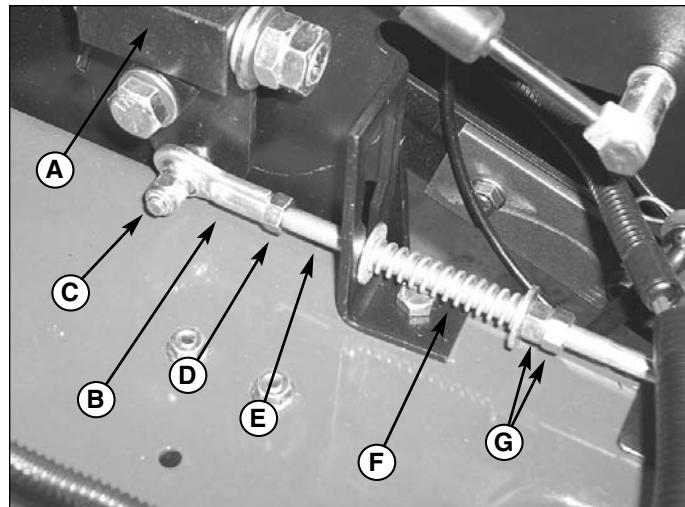
*Note: The rod end is located under the fender beside the operator seat.*

4. Loosen the rod end jam nut (B).

If the transmission is creeping forward, turn the rod end in (clockwise) one or two turns to shorten the link rod (E).

If the transmission is creeping in reverse, turn the rod end out (counterclockwise) one to two turns to lengthen the link rod.

5. Retighten the jam nut, and reconnect the rod end to the control bracket weldment.
6. Start the unit and check for transmission creep. Repeat steps 2-5 if necessary.
7. Once the correct adjustment is achieved, check adjustment of the compression spring (F). With the motion control levers in their neutral locked positions, the spring should have no compression, and should have approximately 1/16-1/8" of free play between the washers at either end. Turn the two adjustment nuts (G) in or out until the desired adjustment is achieved.



**Figure 23. Neutral Adjustment**

- A. Control Bracket Weldment
- B. Rod End
- C. Rod End Connecting Hardware
- D. Jam Nut
- E. Link Rod
- F. Compression Spring
- G. Spring Adjustment Nuts (2)

## ⚠️ WARNING

Incorrect adjustment of the compression springs can cause motion control levers to move from neutral into forward or reverse. This can cause unexpected machine movement, and may result in possible injury and/or equipment damage.

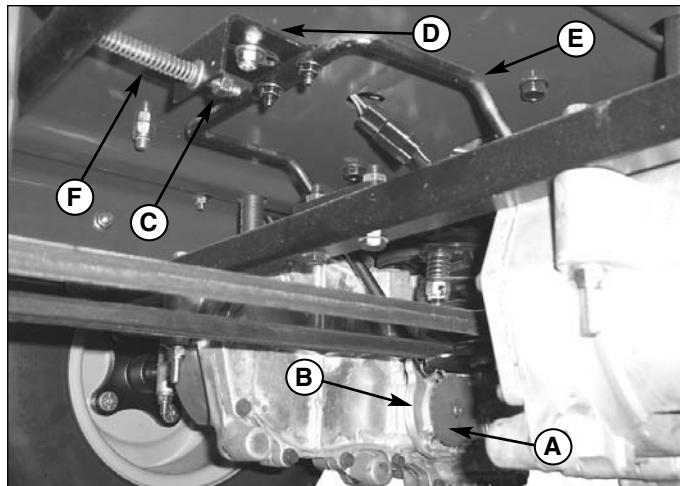
## PARKING BRAKE ADJUSTMENT

### Brake Adjustment

1. Disengage the PTO, stop the engine, block the front wheels, remove the ignition key, and lock the motion control levers into their neutral lock positions.
2. Elevate the rear end of the unit, making sure it is safely supported.
3. Before attempting brake adjustment, check the brake gear (A, Figure 23a), brake arm (B), park brake bracket (D), brake rod (E), and compression spring (F) for dirt or debris that may affect brake operation.
4. Check to see that the brake arms (B) are engaged against the brake gears (A), with the teeth on the arms meshing with the teeth on the gears.

*Note: The rear wheels may need to be moved slightly for the teeth to mesh properly.*

5. With the parking brake disengaged (motion control levers moved from their neutral locked positions), measure the length of the compression spring (F). The measurement should be between 2-1/2" and 2-3/4". If not, tighten or loosen the brake rod adjustment nut (C) until the correct measurement is achieved.



**Figure 23a. Parking Brake Adjustment**

- A. Brake Gear (One Each Side)
- B. Brake Arm (One Each Side)
- C. Brake Rod Adjustment Nut
- D. Park Brake Bracket
- E. Park Brake Rod
- F. Compression Spring

## FRONT SUSPENSION ADJUSTMENT (SELECT MODELS)

The shock assembly can be adjusted to vary the amount of pre-load applied to the springs. This allows the operator to customize the ride according to operator's weight and operating conditions.

### LESS PRE-LOAD:

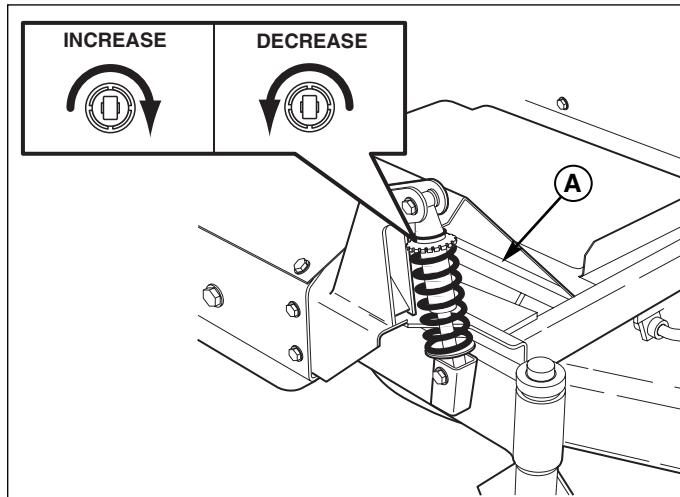
- Light operator weight
- Softer, more cushioned ride
- Best for relatively flat terrain

### MORE PRE-LOAD:

- Heavy operator weight
- Stiffer, more rigid ride
- Better handling and greater stability on hilly terrain

### TO ADJUST THE SPRING PRE-LOAD:

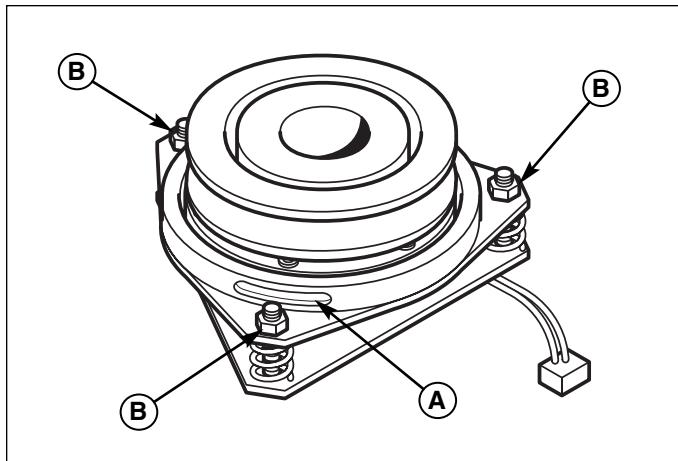
1. Park machine on a flat, level surface. Disengage the PTO, stop the engine and engage the parking brake.



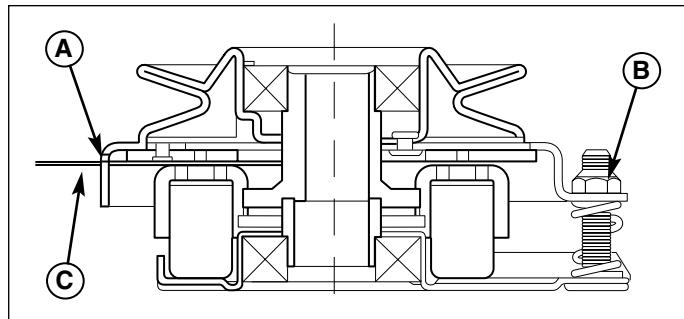
**Figure 24. Front Suspension Adjustment**

- A. Pre-Load Adjustment Collar

2. See Figure 24. Turn the pre-load adjustment collar (A) CLOCKWISE to increase the pre-load, turn COUNTER-CLOCKWISE to decrease the pre-load. Make sure both shocks are set to the same amount of pre-load.



**Figure 25. PTO Clutch Adjustment**  
**A. Adjustment Window (Qty. 3, one shown)**  
**B. Adjustment Nut**



**Figure 26. Adjust PTO Clutch**  
**A. Window**  
**B. Adjustment Nut**  
**C. .016"-.018" (0,40-0,45mm) Feeler Gauge**

## PTO CLUTCH ADJUSTMENT

Check the PTO clutch adjustment after the initial 25 hour break-in period and then after every 250 hours of operation. Also perform the following procedure if the clutch is slipping or will not engage, or if a new clutch has been installed.

1. Remove key from ignition switch and disconnect spark plug wires to prevent the possibility of accidental starting while the PTO is being adjusted.
2. See Figure 25. Note the position of the 3 adjustment windows (A) in the side of the brake plate and the nylock adjustment nuts (B).
3. Insert a .016"-.018" (0,40-0,45mm) feeler gauge (C) through each window, positioning the gauge between the rotor face and the armature face as shown in Figure 26.
4. Alternately tighten the adjustment nuts (B, Figure 25) until the rotor face and armature face just contacts the gauge.
5. Check the windows for an equal amount of tension when the gauge is inserted and removed, and make any necessary adjustments by tightening or loosening the adjustment nuts.

*NOTE: The actual air gap between the rotor and armature may vary even after performing the adjustment procedure. This is due to dimensional variations on component parts, and is an acceptable condition.*

6. Check the mower blade stopping time. The mower blades and mower drive belt should come to a complete stop within five seconds after the electric PTO switch is turned off.

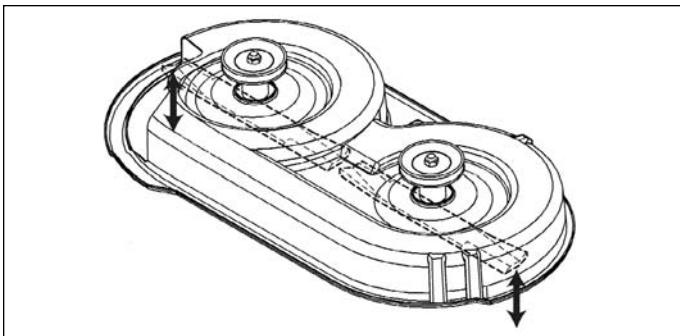
## WARNING

To avoid serious injury, perform adjustments only with engine stopped, key removed and rider on level ground.

## BLADE BRAKE CHECK

Mower blades and mower drive belt should come to a complete stop within five seconds after electric PTO switch is turned off.

1. With parking brake engaged, PTO disengaged and an operator in the seat, start the engine engine.
2. Have an assistant observe the mower drive belt through the opening between the frame and top of mower deck. Engage the PTO and wait several seconds. Disengage the PTO and check the amount of time it takes for the mower drive belt to stop.
3. If the mower drive belt does not stop within five seconds, perform the PTO Clutch Adjustment. If the belt still does not stop within 5 seconds, see your dealer.



**Figure 27. Orient Blades Side-to-Side**

## MOWER DECK LEVELING

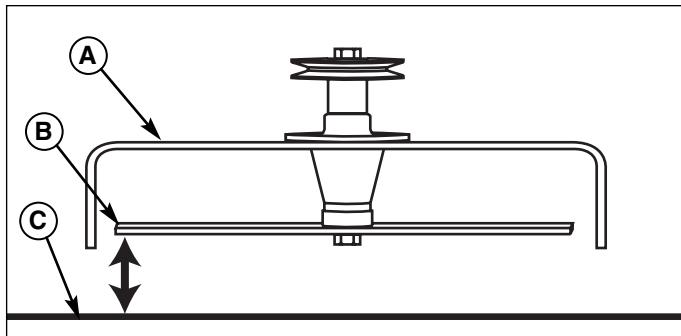
Perform these adjustments on a flat level surface. Be sure to check and adjust tire pressures before leveling the mower deck.

## SIDE-TO-SIDE LEVELING

1. With the mower installed, place the rider on a smooth, level surface such as a concrete floor. Turn the front wheels so they are straight.
2. Check for bent blades and replace if necessary.
3. Place the mower cutting height lever in the fourth adjustment notch from the bottom. Arrange the outside mower blades so that they are pointing from side-to-side (Figure 27).
4. Measure the distance between the outside tips of each blade and the ground (Figures 27 & 28). The measurement should be 3" (7,6 cm), +/-1/8" (3mm). If there is more than 1/8" (3mm) difference between the measurements on each side, proceed to step 5. If the difference is 1/8" (3mm) or less, proceed to step 6.
5. Use the rear leveling nuts (B, Figure 29) to adjust the side-to-side leveling of the deck. Repeat step 4 if necessary.

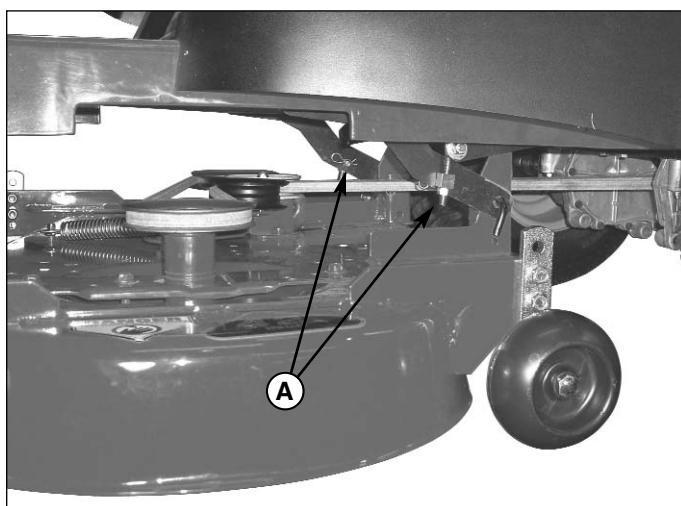
## FRONT-TO-BACK LEVELING

6. Arrange the blades so they face front-to-back (Figure 30).
7. Measure the distance from the ground to the front tip of the foremost blade (left blade on 38" & 42" decks) and from the ground to the rear tip of the rear blade (Figures 28 & 30). The front tip of the foremost blade should be 1/4" (6mm) higher than the rear tip of the rear blade. If not, proceed with steps 8 - 9.



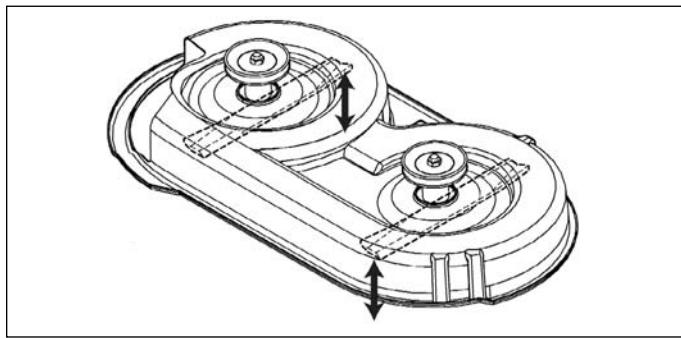
**Figure 28. Measure Blade Tips to Ground**

- A. Mower Deck**
- B. Blade Tip**
- C. Level Ground**



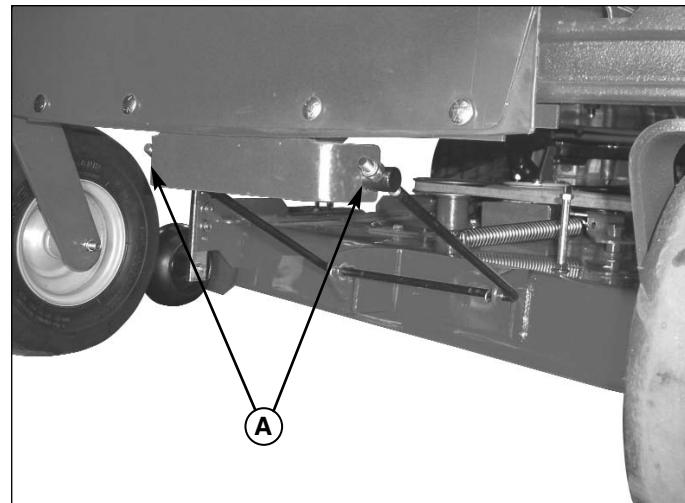
**Figure 29. Mower Leveling - Side-to-Side**

#### A. Rear Leveling Nuts



**Figure 30. Orient Blades Front-to-Back**

8. To adjust the front of the mower deck, use the adjusting nuts on the front hanger bar (A, Figure 31) until the desired measurement is achieved. Be sure to adjust both nuts the same amount.
9. Re-check the blade measurement then repeat steps 7 - 9 as necessary.

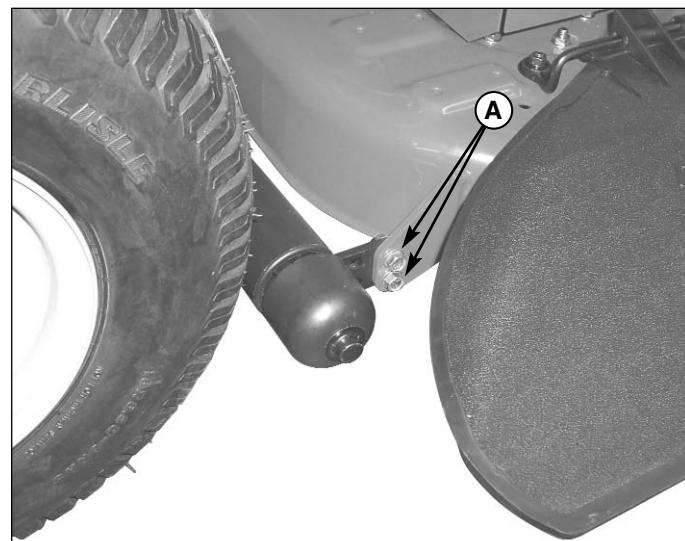


**Figure 31. Mower Leveling - Front-to-Back**  
**A. Front Leveling Nuts**

## ROLLER BAR LEVELING

### (If Equipped)

1. First level the mower deck using the procedure found in MOWER DECK LEVELING.
2. With the mower installed, place the rider on a smooth, level surface such as a concrete floor. Turn the front wheels so they are straight.
3. Place the cutting height adjustment lever in the top adjustment notch.
4. Measure the distance between the outside ends of the roller bar and the ground. If there is more than  $1/8"$  (3mm) difference between the measurements on each side, proceed to step 5.
5. Locate the roller bar leveling hardware on the right side of the mower deck (A, Figure 32). Loosen the hardware and raise or lower the roller bar until the correct level is achieved, then tighten the hardware. Repeat steps 4 & 5 if necessary.

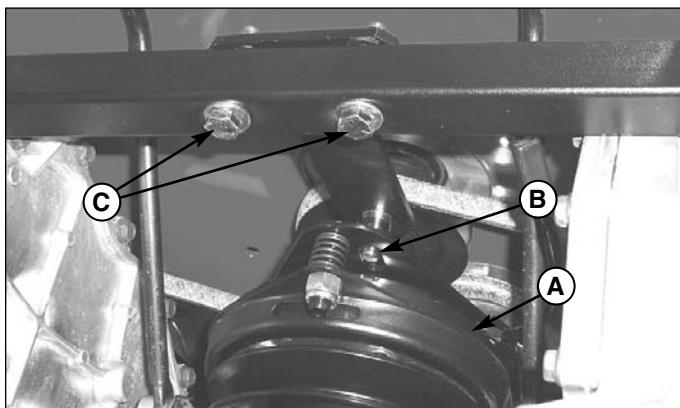


**Figure 32. Roller Bar Leveling**  
**A. Leveling Hardware**

## TRANSMISSION DRIVE BELT REPLACEMENT

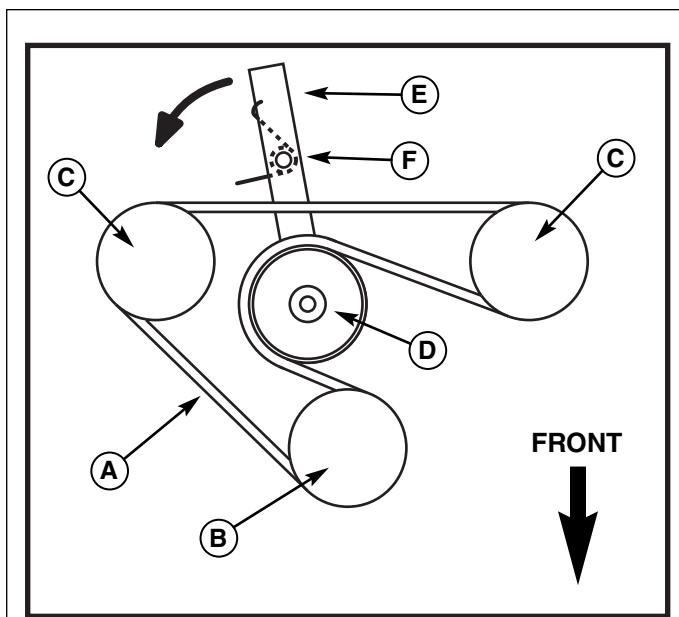
1. Park the rider on a smooth, level surface such as a concrete floor. Disengage the PTO, lock the motion control levers into their neutral locked positions, turn off the engine, and remove the ignition key.
2. Remove the mower belt from the PTO pulley (see MOWER BELT REPLACEMENT for instructions).
3. Relieve tension on the transmission belt (A, Figure 33a) by moving the idler arm (E) in the direction indicated by the curved arrow, and remove the old belt from the crankshaft and transmission pulleys.
4. Loosen (do not remove) the anti-rotation bracket hardware (C, Figure 33a), and slip the old belt out between the anti-rotation pin (B) and the PTO (A).

*Note: The PTO wiring harness must be disconnected from the main wiring harness in order to remove and replace the transmission belt. Be sure to reconnect the harness after the belt is replaced.*



**Figure 33a. Anti-Rotation Bracket (View Looking Back from Mower Deck)**

A. PTO Clutch  
B. Anti-Rotation Pin  
C. Anti-Rotation Bracket Hardware



**Figure 33b. Transmission Drive Belt Replacement (Shown from Below; Components Removed for Clarity)**

A. Transmission Drive Belt  
B. Crankshaft Pulley  
C. Transmission Pulley (2)  
D. Idler Pulley  
E. Idler Arm  
F. Idler Tension Spring

5. Reversing steps 3-4, install the new belt, following the routing in Figure 33b. Make sure the V-side of the belt runs in the grooves of the crankshaft pulley and transmission pulleys (B & C). Also, make sure that the anti-rotation pin (B, Figure 33a) is inserted into the anti-rotation slot on the PTO before tightening hardware (C).
6. Reinstall the PTO drive belt.

## BATTERY CHARGING

A dead battery or one too weak to start the engine may be the result of a defect in the charging system or other electrical component. If there is any doubt about the cause of the problem, see your dealer. If you need to replace the battery, follow the steps under Cleaning the Battery & Cables in the Regular Maintenance Section.

To charge the battery, follow the instructions provided by the battery charger manufacturer as well as all warnings included in the safety rules sections of this book.

Remove the battery from the rider and place on a level, non-concrete surface. Charge the battery at 6-10 amps for 1 hour. Do not charge at a rate higher than 10 amps.

### **WARNING**

**Keep open flames and sparks away from the battery; the gasses coming from it are highly explosive. Ventilate the battery well during charging.**

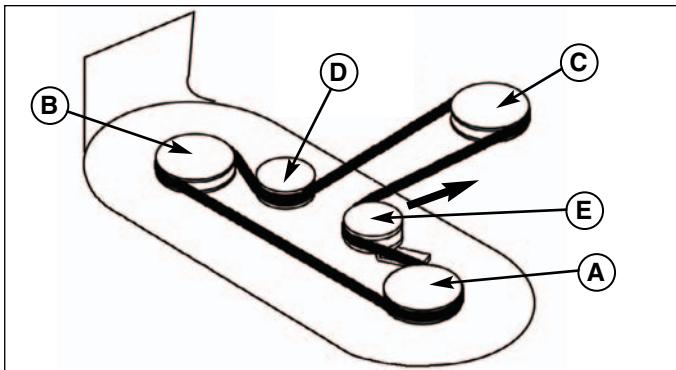


Figure 34. Mower Belt Routing - 38" & 42" Decks

- A. Right Arbor Pulley
- B. Left Arbor Pulley
- C. PTO Pulley
- D. Stationary Idler
- E. Belt Tensioning Idler

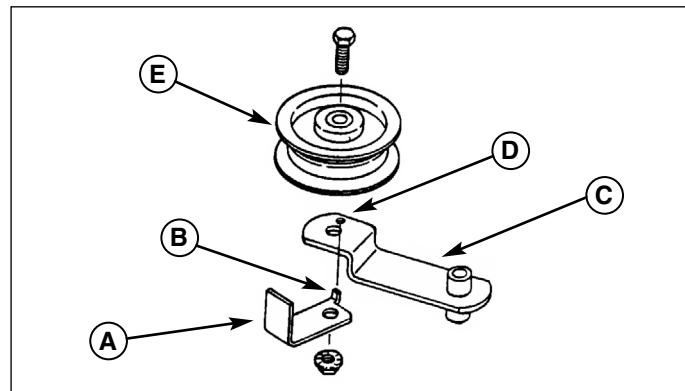


Figure 35. Belt Guide Locator Tab  
(38" Mower Deck Belt Tensioning Idlers)

- A. Belt Guide
- B. Locator Tab
- C. Idler Arm
- D. Alignment Hole
- E. Idler Pulley

## MOWER BELT REPLACEMENT



To avoid damaging belts, DO NOT PRY BELTS OVER PULLEYS.

### 38" & 42" Decks:

1. Park the rider on a smooth, level surface such as a concrete floor. Disengage the PTO, lock the motion control levers into their neutral locked positions, turn off the engine, and remove the ignition key.
2. Raise the mower deck to its highest cutting position.
3. Pull back firmly on the belt tensioning idler (E, Figure 34) in the direction indicated, and remove the belt from the left arbor pulley (A).
4. (38" Decks Only) Loosen (do not remove) the hardware securing the belt tensioning idler pulley to the idler arm, just until the belt guide separates enough from the pulley to allow the belt to slip between the pulley and guide.

*Note: The belt guide (A, Figure 35) has a locator tab (B) that fits into a corresponding hole (D) in the idler arm (C) and keeps the guide aligned correctly.*

*Should the idler assembly inadvertently come apart while loosening, be sure the belt guide is correctly reinstalled onto the idler arm.*

5. Remove the old belt from the remaining pulleys.
6. Reversing steps 3 - 5, install the new belt, following the routing in Figure 34. Be sure to retighten the idler pulley hardware (if applicable).

## Troubleshooting, Adjustments, & Service

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### FUSE REPLACEMENT

1. Park the rider on a smooth, level surface such as a concrete floor. Disengage the PTO, lock the motion control levers into their neutral locked positions, turn off the engine, and remove the ignition key.
2. Raise the seat. The fuse holders are located on the right side of the rear seat support.
3. Remove and check the suspected fuse (or fuses). If blown, replace with a fuse with a rating equal to the ratings indicated in Figure 36.

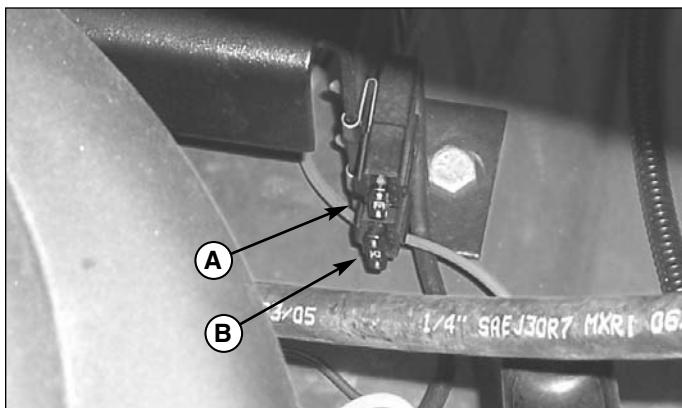
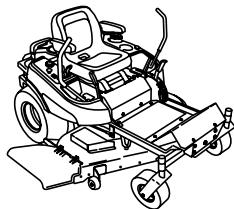


Figure 36. Fuse Designations and Ratings

A. Accessory - 30 Amp  
B. Start - 15 Amp

### ⚠ WARNING

Do not use a fuse with a rating other than that specified. Serious equipment damage may result.



# Specifications

*NOTE: Specifications are correct at time of printing and are subject to change without notice.*

*\* Actual sustained equipment horsepower will likely be lower due to operating limitations and environmental factors.*

## ENGINE:

### 18.5 HP\* Briggs & Stratton

Make	Briggs & Stratton
Model	18.5 hp Intek
Horsepower	18.5 @ 3400 rpm
Displacement	30.59 Cu. in (501 cc)
Electrical System	12 Volt, 16 amp. Alternator, Battery: 230 CCA
Oil Capacity	52 oz. (1.5L) w/ Filter

### 20 HP\* Briggs & Stratton

Make	Briggs & Stratton
Model	20 hp Intek
Horsepower	20 @ 3500 rpm
Displacement	40.0 Cu. in (656 cc)
Electrical System	12 Volt, 16 amp. Alternator, Battery: 230 CCA
Oil Capacity	64 Oz. (1.9 L) w/ Filter

### 20 HP\* Kohler

Make	Kohler
Model	20 hp Courage
Horsepower	20 @ 3600 rpm
Displacement	36.4 Cu. in (597 cc)
Electrical System	12 Volt, 15 amp. Alternator, Battery: 230 CCA
Oil Capacity	51 Oz. (1.5L) w/ Filter

## CHASSIS:

Fuel Tank	Capacity: 3.0 Gallons (11.4 L)
Rear Wheels	Tire Size: 18 x 6.50-8 (38" Deck Models) 18 x 8.50-8 (42" Deck Models)
Front Wheels	Inflation Pressure: 15 psi (1,03 bar) Tire Size: 11 x 4.00-5 Inflation Pressure: 25 psi (1,72 bar)

## Engine Power Rating Information

The gross power rating labels for individual gas engine models meet or exceed SAE (Society of Automotive Engineers) code J1940 (Small Engine Power & Torque Rating Procedure) and rating performance has been obtained and corrected in accordance with SAE J1995 (Revision 2002-05). Actual gross engine power may be lower and is affected by, but not limited to, ambient operating conditions and engine to engine variability. Given both the wide array of products on which engines are placed, and the variety of environmental issues applicable to operating the equipment, the gas engine will not develop the rated gross power when used in a given piece of power equipment (actual "on-site" or net horsepower). This difference is due to a variety of factors including, but not limited to, accessories (air cleaner, exhaust, charging, cooling, carburetor, fuel pump, etc.), application limitations, ambient operating conditions (temperature, humidity, altitude), and engine to engine variability.

## TRANSMISSIONS:

### Hydro-Gear

#### ZA-DHBB-2D5A-2DCX (LH)

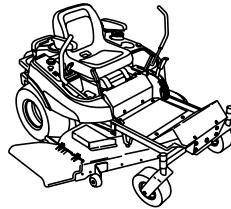
#### ZA-AHBB-2D5A-2DCX (RH)

Type	EZT
Hydraulic Fluid	Sealed Unit
Speeds	Forward: 0-6.2 MPH (0-9.98 km/h) Reverse: 0-3 MPH (0-4.83 km/h)
@ Specified rpm	115 ft. lbs. (155 N.m.)
Continuous Torque	
Output	
Maximum Weight on Axle	340 lbs. (154 Kg) per Axle

## DIMENSIONS:

Overall Length	72" (182,9 cm)
Overall Width	
With 38" Mower Deck	49" (124,5 cm)
With 42" Mower Deck	52" (132,1 cm)
Height	38" (96,5 cm)
Weight (apx.)	
With 38" Mower Deck (Simplicity)	520 lbs. (236 kg)
With 38" Mower Deck (Snapper)	500 lbs. (227 kg)
With 42" Mower Deck	540 lbs. (245 kg)

# Parts & Accessories



## REPLACEMENT PARTS

Replacement parts are available from your authorized dealer. Always use genuine Simplicity/Snapper Service Parts.

## MAINTENANCE ITEMS

Many convenient and helpful service and maintenance items are available from your authorized dealer. Some of these items include:

Engine Oil	Tire Sealant
Touch-Up Paint	Degrimer/Degreaser
Grease Gun Kit	Gas Stabilizer
8 oz. Grease Tube	

## TECHNICAL MANUALS

Additional copies of this manual are available, as well as fully illustrated parts lists. These manuals show all of the product's components in exploded views (3D illustrations which show the relationship of parts and how they go together) as well as part numbers and quantities used. Important assembly notes and torque values are also included.

For applicable manuals currently available for your model, contact our Customer Publications Department at 262-284-8519. Have the information listed in the box below available when phoning in your request. Technical manuals can be downloaded from [www.simplicitymfg.com](http://www.simplicitymfg.com) or [www.snapper.com](http://www.snapper.com)

<b>Model:</b>	<input type="text"/>
<b>Mfg. No.:</b>	<input type="text"/>
<b>Your Name:</b>	<input type="text"/>
<b>Address:</b>	<input type="text"/>
<b>City, State, Zip:</b>	<input type="text"/>
<b>Visa/Mastercard No.:</b>	<input type="text"/>
<b>Card Expiration Date:</b>	<input type="text"/>



PRODUCTS, INC.  
McDonough, GA., 30253

[www.snapper.com](http://www.snapper.com)

***Simplicity***  
®

MANUFACTURING, INC.  
500 N Spring Street / PO Box 997  
Port Washington, WI 53074-0997

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